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United States - Asia Environmental Partnership

Asia and Near East Bureau
Agency for International Development

Strategic and Action Plans
1995 - 2000

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TABLE OF CONTENTS

PREFACE

The world's environmental future will be determined in significant part by what happens in Asia, where economic and population growth and environmental stress are converging most forcefully. Few would disagree that environmental degradation in the Asia region requires massive, immediate attention.

Yet, consider the challenge. Asian countries have compressed the transformation of their economies into decades, something that took the industrialized countries over a century. And while the industrialized countries devoted decades to develop the systems necessary to support environmental improvement, Asian countries must now do the same in just a very few years.

Many thoughtful business, development, environmental, and technology professionals contributed from their experience to help the ANE Bureau and the United States - Asia Environmental Partnership (US-AEP) Secretariat identify ways to collapse, or even leap-frog, the time necessary to meet the environmental challenge in Asia, before it overwhelms the region and further threatens global systems. The consensus emerging from this interaction can be briefly summarized:

- Focus on the principal culprit - very rapid economic growth throughout the region.
- Articulate a transcendent goal - a "clean revolution," transforming development plans, the industrial regime, and urban habitats throughout Asia.
- Conceptualize a strategy that can have massive and immediate impact - extending the reach of United States environmental experience, practice, and technology to Asia, creating a "virtual" capability for environmental improvement in the near-term, and defining the United States as the referent for environmental quality in over the longer-term.

This strategy may constitute a challenge to USAID since it proposes to energize and focus private initiative, defining a new approach to development promotion. It is ambitious and challenges development orthodoxy. The activities supported by US-AEP attempt to build on new global linkages, markets, networks, and systems. All activities propose to connect professionals and organizations from the United States with counterparts in Asia. Most call for cooperation among governmental, business, and nongovernmental organizations. They do not require large new transfers of aid, but rely heavily instead on new relationships within the private and independent sectors, albeit supported and channeled by public activity.

SUMMARY

The critical tension between economic performance, population growth, and environmental quality defines the Asia region as an important test case for sustainable development. And because other countries in the region are emulating East Asia's success formula, the challenge for sustainable development will be compounded over the next decade. Unless further economic growth in the region is "cleaner," and unless new approaches to the provision of environmental infrastructure are assured, the implications for people's lives and the resource base in Asia (if not the world) are dire. These potential consequences will have serious implications for how USAID and others think about sustainable development and what they do to promote it in the Asia region.

- Unless and until sustainability concepts are incorporated among the development goals of countries in Asia, the prospects for improvements in environmental quality will remain limited. Once embedded in public consciousness and policy, however, the economic structure of most countries in the region will facilitate the rapid transmission of environmental signals to decision makers. Incentives work in Asia.

- The industrial stock in East Asia is doubling every five years, and by 2010 as much as 85 percent of that stock will be new as measured from today. This remarkable phenomenon, taken together with the very real potential for "partnership" approaches to development promotion in the region, underscore both the importance and opportunity to launch a "clean revolution" in the industrial sector in East Asia. It also suggests the rationale for configuring a continuing development relationship with the advanced developing and industrializing countries in the Asia region.

- Rapid industrial growth among the advancing countries in the region is already having a negative impact on the developing countries (e.g., technology hand-off in low-wage grey-goods sectors like textiles). This dangerous situation underscores the case for work in the industrial sector, even among the less advanced countries in the region (perhaps with a greater emphasis on waste minimization and pollution prevention). Note that the pressure on agro-industrial systems is equally present in both the advancing and developing countries.

- As a consequence of adopting rapid growth models, most urban areas in the Asia region are falling behind in the provision of environmental infrastructure (i.e., clean water, waste water, and solid and hazardous waste disposal). This is because industrial growth is outstripping the institutional

and financial structures of governments, particularly among the developing countries in the region.

Given the pressure on USAID resources, agency policy with regard to country presence, and the range of development activities already supported bilaterally and by the Global Bureau, US-AEP should also define a distinctive approach (e.g., a partnership approach), which can be distinguished from other development approaches (e.g., development cooperation as contrasted with development assistance), which assures financial leverage, and which offers the promise of sustainability in delivery. US-AEP is not ANE's "all things" environmental project, but rather an important test of alternative approaches to development promotion in an important and distinctive regional context.

With this background, the following materials suggest three strategic objectives and three management objectives for US-AEP for the period 1995 - 2000.

SO1 - sustainable development as a national goal throughout Asia;

SO2 - efficient and less polluting industrial regimes in Asia;

SO3 - environmental systems and services available to poor households in urban areas in Asia;

MO1 - cooperation with sources of public and private environmental resources and expertise in Asia and the United States;

MO2 - complementarity of programming with collaborators; and

MO3 - a replicable model for development programming.

The US-AEP Secretariat drew from the wisdom of a large number of people and organizations in preparing this strategy document, including staff from the Secretariat itself, of course, other USAID staff, related technical support and evaluation contractors, implementing organizations, and other collaborating professionals and participating organizations. Many of the ideas and approaches of these people and organizations overlap with those of the Secretariat. In each of these situations, we have made liberal use of language and material directly from their papers and publications to express or to underscore a point. Given the nature of this document, however, we did not footnote each use, although we do acknowledge our debt to all of those who worked with the Secretariat or otherwise contributed to the development of the proposed strategy.

Strategic and Action Plans
1995 - 2000

PART I

SUMMARY ANALYSIS OF THE ASSISTANCE ENVIRONMENT

PART I: SUMMARY ANALYSIS OF THE DEVELOPMENT SITUATION

A. SIGNIFICANT TRENDS

An important, if not the important, development challenge for countries in Asia is to reconcile two potentially conflicting goals: i) sustaining large increases in economic activity and growth, and ii) improving environmental quality. In fact, the challenge is a global one. Rapid economic growth in the Asia region and its associated environmental consequence are already a principal contributor to global warming, ozone depletion, and the loss of biodiversity worldwide.

THE CHALLENGE

Asia's development performance is generally considered successful. The emergence of China and India as important players in the world economy, very rapid economic growth throughout East and South East Asia, the reorientation of economic premises and strategies in South Asia, the rebirth of economic activity in Indo-China, and the burgeoning pattern of trade and investment between the region and the industrialized countries all support a positive view of Asia's development experience.

Yet, success has had its price. Pressure on the region's resources is intense and growing. The driving trends related to public health and the environment are economic and demographic (i.e., very rapid growth, urbanization, and rural transformation), resulting in serious problems in areas of the urban environment, industrial pollution, atmospheric emissions, soil erosion, degradation of water resources, deforestation, and loss of natural habitats. There are also new threats to world systems emanating from the region - global warming, ozone depletion, acid rain, deforestation, mass extinctions, and marine degradation. And the real costs of environmental degradation are mounting, taking the form of increasing health costs and mortality, reduced output in resource-based sectors, and the irreversible loss of biodiversity and overall environmental quality.

In principle, environmental degradation could be reduced by limiting population, by slowing the rate of economic growth, or by increasing the adoption of less-polluting and more resource-efficient approaches to development. The third option is probably the most viable. Demographic momentum points toward a doubling of population in Asia by the mid-21st century, and there is little likelihood that there will be any diminution in the economic aspirations of countries in the region.

To affect a reconciliation of development goals, however, economic systems will have to change, and also assumptions and understanding about development. Indeed, given the growing tension between economic and population growth and the environment, Asia must accomplish nothing short of a transformation in the way in which development is understood and carried out. The challenge is to find ways to make fundamental trends in economic and population growth more sustainable, and to reduce the trends in pollution, resource degradation, and resource inefficiency that are already apparent.

KEY ENVIRONMENTAL ISSUES

The US-AEP Secretariat, taking into account the analysis and views of field missions and other offices in the ANE Bureau, USAID's Global Bureau, Asian Development Bank, World Bank, Biodiversity Conservation Network, Winrock International, World Environment Center, and World Resources Institute has identified the following six key environmental issues in the Asia region.

1. Water Pollution

Water pollution is generally conceded to be the most widespread environmental issue in Asia. The demand for water continues to rise rapidly across all sectors, lock-step with growth in urban areas, industry, irrigation systems, and hydroelectric power. The associated costs of long-term water cleanup and sustainable management are the highest of any resource. And water pollution is responsible for significant mortality and sickness throughout Asia, particularly among children and the urban poor.

2. Air Pollution and Atmospheric Changes

Twelve of the fifteen cities in the world with the highest levels of particulate matter, and six of the 15 cities with the highest levels of sulphur dioxide, are in Asia. Of the seven cities in the world ranked worst for air pollution, five are in Asia. In addition, Asia is rapidly emerging as a major contributor to global warming, ozone depletion, and acid rain.

3. Solid, Toxic, and Hazardous Waste

While the per capita amount of solid waste generated in Asian cities is small, the total amount of waste generated is significant. Currently, large metropolitan areas in Asia generate over a million tons of waste each year, aggravated by increasing trend lines of toxic and hazardous waste. This latter trend is particularly significant for future clean-up since toxics and hazardous wastes will require special handling and treatment.

4. Land Degradation

Nearly 20 percent of the vegetated area in Asia (almost 30 percent in India) was affected by human-induced degradation between 1945 and 1990, and up to 50 percent is susceptible to erosion. The sources for this very dangerous trend are found in poorly managed logging operations, indiscriminate land clearance, wide-spread use of annual crops in farming systems, and thinning of vegetation by stripping of land for fuel wood.

5. Deforestation

The forest resource base in Asia is being rapidly depleted. Once dominant exporters such as the Philippines and Thailand have virtually exhausted their forests; India, historically self-sufficient, has become a major importer; and the remaining forest surplus countries (Indonesia, Laos, Malaysia, Myanmar, and some of the Pacific Island nations) are facing excessive and non-sustainable rates of deforestation.

6. Loss of Biodiversity

Deforestation is the major cause of habitat loss in Asia, threatening the region's extraordinary range of biological diversity. In fact, nearly three-fourths of the natural habitat in the Asia region has been lost or irreversibly degraded. And it is estimated that Asia will lose a higher proportion of its species and natural ecosystems than any other region during the next 25 years.

B. OVERALL DEVELOPMENT PROSPECTS AND OPPORTUNITIES

Most countries in Asia continue to see government as an important driver of economic activity. And most governments in Asia identify per capita income as a key national goal. Having focused on growth targets for three decades, some governments today verbalize a concern for the broader dimensions of development (e.g., for sustainability). Yet, no single government (with the exception of Singapore) has taken the initial step to include sustainability among more familiar development objectives: stability, growth, and equity. An important goal in Asia must be the explicit recognition of sustainability issues, broadly defined, in every aspect of the planning and development process.

But even as Asian governments reorient and clarify the direction of their development thinking and policy, there remain serious and mounting environmental issues. If Asian economies continue to grow (and they are projected to be five times larger than they are today by the middle of the next century), then very serious, if not catastrophic, impacts are virtually certain for global climate, biodiversity, human health, and the productivity of natural

systems. It is imperative, then, that Asian governments take immediate steps to reduce current levels of pollution, resource degradation, and resource inefficiency, this in addition to the longer-term transformation of the development regime itself.

DIMENSIONS OF THE ENVIRONMENTAL PROBLEM

Concern for environmental quality, even among the industrialized countries, of course, is relatively recent. For the few decades that governments have taken explicit account of the environment, focus has been directed largely to abating pollution and cleaning up local problems. Most countries recognize today that something more fundamental is necessary, a virtual transformation of the development process onto a more sustainable path - a path that fuses economic and environmental objectives. What is it that has caused this change in thinking about the environment and development?

1. The Change from Modest to Huge Quantities

Environmental problems are as old as humanity, but the 20th century has produced enormous quantities of pollution. In this century alone, population has increased threefold and the world economy has expanded twentyfold with direct consequence for the environment. Take the case of energy. Electricity generation in the Asia region doubles every 12 years (compared to a global rate of every 28 years), and energy intensity in Asia (the amount of energy per unit of output) is already the highest in the world. Or take the case of atmospheric emissions of sulphur and nitrogen oxides which increased more than 600 and 1200 percent from Asia between 1945 to and 1980. Or take the case of Thailand which doubled its municipal solid waste in just fifteen years. Continued energy generation and pollution at these levels is not sustainable.

2. The Change from Gross Insults to Microtoxicity

Before the Second World War, environmental concern was directed largely at smoke, sewage, and soot. These threats persist and are mounting in the Asia region. But since 1950, synthetic organic compounds and radioactive materials have produced a very different kind of problem. Many of these substances are highly toxic in minute quantities and highly persistent in biological systems or the atmosphere. Such substances, though imbedded in modern life, pose extraordinary risks; and improper design, use, and disposal of these substances suggest enormous costs (to natural systems and human health, but also to societal budgets for cleanup). To rapidly-growing, technology-based, agricultural and industrial economies like those in Asia, particularly among the "tigers" of East Asia, this new dimension of the environmental challenge looms large.

3. The Change from the Industrialized to the Developing World

The notion that pollution is mainly a problem of the industrialized countries is by now only myth. We know, for example, that cities in Asia are more polluted with sulphur dioxide and particulates than most cities in the industrialized countries. More alarming, we know that the situation is getting worse. In Asia between 1973 and 1984, sulphur dioxide pollution went up about ten percent a year. Putting that together with the fact that industrialization in the Asia region is accelerating, there is ample reason for concern by Asian governments and alarm from international development agencies. Indonesia, for example, has yet to install 80 percent of the industrial capacity that it will have by the year 2010. The stark reality is that the world's environmental future will be determined in significant part by what happens in Asia, where economic and population growth and environmental stress are converging most forcefully.

4. The Change from Local to Long-Term Global Effects

Up to very recently, pollution was generally viewed as a local and acute problem. Today, this view is no longer tenable. Since the worldwide scale and intensity of pollution has not abated (or only a little, and that only in the industrialized countries), and scientific knowledge has grown, pollution and resource degradation have come to be recognized as a global and chronic phenomenon. This means that not only can pollution (and resource degradation) be found everywhere and pollution migrate from here to there, but also that its impacts are now large enough to alter natural processes. Indeed, it is generally agreed that rapid economic growth in the Asia region may already be the principal contributor to global warming, ozone depletion, and the loss of biodiversity worldwide. We no longer have just an environmental problem, rather a development problem, a sustainability problem.

THE DEVELOPMENT OPPORTUNITY

There are hopeful signs. Practitioners of the development art (e.g., development economists and planners, government policy makers and budgeteers, etc.) are increasingly able to articulate what they mean by sustainability and to identify those approaches, principles, methods, polices, and systems which must change in order to reconcile economic and environmental goals. And the craftsmen of development (e.g., farmers, industrial workers, manufacturers, utility managers, corporate CEOs, etc.) today work in a world where experience, best practice, and new technologies are increasingly available to moderate or reduce the most dangerous trends in pollution, resource degradation, and resource inefficiency.

1. Sustainable Development

There is a growing worldwide consensus that population growth, radical structural change, the desire for steady increases in per capita income, the determination to escape from poverty, and other pressures of the development process are putting too great a strain on the environment. Indeed, these pressures have led to questions about the sustainability of economic development and have given a sense of urgency to efforts to add a sustainability dimension to the economic development concept. The challenge to development practitioners, of course, is to operationalize the concept of sustainable development. Fortunately, as noted above, there are approaches, principles, methods, polices, and systems now known which can be used.

One necessary condition for effective economic management, of course, is rigorous analysis. Of special relevance to such analysis are new and improved concepts of national income accounting, economic rent, the discount rate, population carrying capacity, and scale/distribution/and allocation, each of which can take account of environmental effects. Development practitioners also need to be aware of the impact of key macroeconomic policies on the environment, and the interplay between democracy, gender, poverty, population growth, external trade and payments, pricing policies, taxes and revenue policies, and public expenditure and investment and the environment. And, finally, development administrators need to learn more about, and to adopt, environmental management policies and practices that have been successfully developed, tested, and proven in the industrialized and other developing countries over the past three decades.

2. Environmental Quality

As noted above, the dangerous direction of environmental trends in the Asia region make it imperative that governments take immediate steps to reduce current levels of pollution, resource degradation, and resource inefficiency. An important part of the trend line, of course, is the legacy of technologies and management practice designed at a time when environmental concerns were largely unknown or ignored. The advancing countries in Asia imported this legacy insofar as products, processes, and systems were transferred from the industrialized countries. Yet, paradoxically, much of the recent environmental experience (i.e., best practice, technology, and management) from the industrialized countries holds out the promise of moderating, if not eliminating, many of the most dangerous trends.

Today the United States is the world's environmental leader. Revolutionary advances from the United States in information and management systems, telecommunications, biotechnology, new materials, and miniaturization portend a dramatic reduction in materials and energy inputs. Pollution-monitoring-and control

technologies have matured into an environmental industry estimated at more than $100 billion. And a new environmental ethic is infusing education, public awareness and concern, corporate board rooms, and official development assistance.

The environmental experience, best practice, technologies, and management systems of the United States can be used to ameliorate dangerous environmental trends in the Asia region in two ways. First, and most immediately, Asian institutions and organizations can identify, obtain and/or adapt, and deploy proven approaches to pollution control, remediation, and environmental management from the United States. Second, Asian institutions and organizations can draw on the even broader development experience and industrial and manufacturing capability of the United States to transform basic economic and production processes (both rural and urban, agricultural and industrial), building in efficiency and environmental soundness at the source - mindful always, of course, of the local and regional context.

C. DEVELOPMENT CONSTRAINTS

This section identifies i) the key constraint that impedes progress towards sustainability in Asia, and ii) those other important constraints which impede a rapid reduction in the more dangerous trends in pollution, resource degradation, and resource inefficiency that mark the Asia region. Each of these constraints should also be viewed as an opportunity, since they help define the areas where development initiative might be deployed most usefully.

1. The Absence of Sustainability as a Development Objective

To resolve the growing conflict between rapid economic growth and environmental quality in Asia, it is necessary to introduce sustainability issues in every aspect of the planning and development process. Yet, no single government in the Asia region has taken the initial step to include sustainability among its more familiar development objectives: stability, growth, and equity. To affect the necessary transformation in the way in which development is understood and carried out, steps need to be taken to broaden participation, improve public awareness, and overhaul development policy.

2. The Lack of Demand for Environmental Quality

Demand for environmental quality throughout Asia is weak, and in many cases distorted. There are steps which could be taken to enhance and refocus demand: illustratively, measures of economic productivity could be reconceptualized to recognize environmental costs; measures of environmental impact could be recharacterized to be more relevant to business decision-making; environmental policy, laws, and regulations, and product standards could be overhauled to

promote pollution prevention, waste minimization, resource conservation, and efficiency; more effective incentives for investments in clean technologies could be devised and deployed; the enforcement of existing environmental regulations could be improved; and economic activity generally could be reorganized to better assure total quality environmental management.

3. The Absence of Information about Environmental Improvement

Documentation and dissemination of information about positive experience and proven best practice, technologies, and management systems are a major focus of programs for environmental improvement in the industrialized countries. While there is as yet no systematic understanding of the extent or nature of information deficiencies in each Asian country, there is anecdotal evidence that what the advancing countries in Asia require is "real time" information and consultation on how to employ relevant environmental experience, practice, technology, and management systems from industrialized countries like the United States (and other developing countries where relevant) so as to reduce pollution, resource degradation, and resource inefficiency while still meeting economic and financial goals.

4. Lack of Financial Resources and Investment Incentives

Environmental improvement in the advancing countries of Asia is fundamentally dependent upon funds to underwrite the costs of pollution control and remediation, the investment resources for environmental enterprise and infrastructure, and the deployment of new clean technologies. These problems are most frequently raised with regard to the "up-front" requirements for small and medium-sized enterprises and municipalities. A major increase in public funding is not the only answer, particularly for the private sector, rather the development and deployment of new financial incentives and the output from innovative financial engineering (e.g., BOT for environmental infrastructure).

5. Weak Managerial and Technical Capabilities

The ability to improve environmental quality or management is not an independent capability, rather a function of a country's or enterprise's more general ability to access, adapt, develop, and deploy new approaches, ideas, practices, processes, products, technologies, and systems. Much of the growth in the advancing countries of the Asia region can be attributed to accumulated professional and institutional capability in both industry and government. But, among the developing countries, the problems of building a more modern professional and institutional infrastructure, and training enough people, continue to frustrate the prospects for both economic and environmental improvement.

6. Missing Connections Between International Partners

As already noted, there is important environmental experience, practice, and technology in the world (and particularly the United States) which could be applied to environmental improvement in Asia, but there is a persistent problem in making connections between potential partners. Barriers of distance and culture must be scaled in all international transactions. These difficulties are multiplied if markets, information sources, and the means of matching potential partners are poorly developed. Although there are models to facilitate international trade and investment (e.g., Japanese trading companies), few focus explicitly on environmental technology or environmental improvement. Fewer foster long-term relationships which are so important to assuring continuous improvement and renewal. And fewer still are rooted on a coherent development premise. Indeed, the problem of weak or missing connections, or partnerships, across countries, sectors, and organizations is a fundamental theme of this analysis and the following strategic plan.

D. LESSONS LEARNED

The United States has promoted development ideas and investment in developing countries for almost five decades. In Asia, this has returned high dividends. South Korea and Taiwan, both USAID graduates, are important success stories. Malaysia and Thailand are on the cusp. Indonesia, the Philippines, and Sri Lanka are poised for take-off. And China and India loom ever-larger in the world economy.

This remarkable situation is strikingly different from earlier development experience. First, there is an accelerating trend in the pace of technical change throughout Asia, spurred by the increasing competitiveness of the global marketplace. Second, comparative advantage is no longer thought of in terms of natural endowments, but in terms of human creative power, highly educated workforces, and organizational talent. Third, there is an increasingly firm commitment in each of the countries to the idea of the market. Fourth, there is a relatively mature institutional and physical infrastructure. And finally, an important and growing cadre of professional, managerial, and technical people are at work in a more decentralized decision-making milieu. In short, Asia's advancing economic and technological systems define a powerful new platform for development promotion.

Against this backdrop, important new ideas and world realities are reshaping USAID's continuing engagement in the region.

1. The Asia Region Asia is home to over half of the world's population, half of the world's poor, half of the world's largest cities, and the world's two largest countries. Asia is also the

world's most dynamic economic region. And, significantly, the sinews which bind the region to the United States are strengthening - reflected in the makeup of our population, academic and cultural institutions, and patterns of international trade and investment.

2. **The Environment** Rapid economic and population growth in Asia have brought in their wake an equally rapid build-up in environmental pressure and consequence. The real costs of environmental degradation are mounting, taking the form of irreversible losses of biodiversity, significant new contributions to global warming, further destruction of the ozone layer, increasing health costs and mortality among the urban poor, reduced output in resource-based sectors, and declines in overall environmental quality. Over the near term, these pressures and consequences will continue to multiply.

3. **Technology** Technology is both problem and solution for the environment in Asia. Technological change has contributed to economic growth which, in turn, has contributed to environmental degradation. Properly channelled, however, it may be the key to environmental sustainability as well. But more needs to be done to capitalise on its potential. Current best practice must be diffused more rapidly. Environmentally superior products and processes need to be brought to market more quickly, and investment must be channelled in environmentally sound directions.

4. **Globalization** Paralleling the collapse of the Soviet Union, the rise of democratic and market-oriented national systems, and rapid economic growth in Asia, the globalization of the marketplace for trade, investment, and technology cooperation in the 1980s and 1900s, globalization may be the single most important new circumstance for development promotion. Indeed, the global marketplace could be the sustaining medium for recruiting and engaging important policy, educational, financial, and technology actors in international development promotion. While long experienced with local, national, and regional markets, the global marketplace constitutes a new challenge (and opportunity) for international development organizations.

5. **Reinventing Government** It is evident that government can no longer be principally responsible for development, the economy, and the environment. New patterns of government activity and intervention must be defined; patterns that rely fundamentally on the strength of private enterprise and other nongovernmental organizations; patterns that are more catalytic than operational; patterns that leverage resources from a wide range of partners; patterns that can redefine the United States - Asia development relationship and define a new Partnership.

6. **Development Cooperation** Up to now, aid agencies have been the important intermediaries between the developing and industrializing countries. Regrettably, official assistance has often had the

inadvertent effect of fostering a seductive public alternative to private investment and technology cooperation. If the driving force of economic development is apt to be the private sector, if net increments to investment and technology transfer will have to be found in the marketplace, as undoubtedly will be the case in Asia, then development assistance will have to give way to new patterns of development cooperation.

7. **Partnership** It will be increasingly important to develop new ways of engaging the considerable human and institutional resources of both the United States and the countries of Asia to meet development, environmental, health, and other important objectives for the region and the world. The absolute imperative is to move away from parallel to cooperative play, to get more from government resources, to recognize the common goals of different institutions and organizations, to make the connection between domestic and international agendas, and to widen the reach of United States engagement and responsibility in Asia.

8. **Continuing Interests** Even taking into account the very obvious logic to a partnership strategy as the basis for development promotion, there is, nevertheless, as yet a difficult range of issues limiting the engagement of Asia's advancing economic and technology systems with world systems. An enormous range of actions, both public and private, are needed to advance the deployment and application of relevant United States experience, practice, and technologies to the problems of the environment in the region.

9. **Leverage** A development strategy premised on dollar-for-dollar public finance is obviously limited. Today, the international capital markets can be tapped for the full range of urban infrastructure, if properly organized and managed, for an increasing portion of social infrastructure, and for the development and deployment of environmental technologies and practice. Government would do well to allocate its scarce resources to build the environmental marketplace where demand can meet its own independent supply of capital and technology.

10. **United States - Asia Environmental Partnership** The end game, and an important new idea in this catalog, is the United States - Asia Environmental Partnership which seeks to promote a dynamic, self-generating, and self-sustaining pattern of interaction between individuals and organizations, flexible and fluid, with individuals and organizations entering and exiting, mixing and matching what each does best with the best of other individuals and organizations. The synergy for the Partnership will probably be found in new systems to support the demand for environmental improvement, information about environmental alternatives, the allocation of new financial resources to the environment, the upgrading of professional and institutional environmental sensitivities and capabilities, and finally facilitating the

connections between potential development and environmental partners.

E. COLLABORATIVE RELATIONSHIPS

In addressing sustainable development and environmental problems, the US-AEP Secretariat collaborates with numerous other actors and organizations from the government, nongovernmental, and private sectors. A list of important partnership relationships follows:

1. Collaborating Organizations

- USAID
  - ANE Bureau - Strategy Office
  - ANE Bureau - Field Missions
  - Global Bureau -
    - Environmental Cluster
    - Economic Growth Cluster
    - CDIE and CTIS
  - Policy and Program Coordination
- U.S. Department of Agriculture (International Coop.)
- U.S. Department of Commerce (TPCC)
- U.S. Department of Energy (Office of the Secretary)
- U.S. Department of State (Asia and Global bureaus)
- U.S. Environmental Protection Agency (Intl. Affairs)
- Office of the Science and Technology Policy
- National Security Council
- Export-Import Bank
- World Bank
- Asian Development Bank
- APEC Inter-Utility Group
- Asian Energy Institute
- ASEAN Secretariat
- Global Environmental Management Initiative
- Biodiversity Conservation Network
- Tropical Research & Development
- Management Systems International
- Tata Energy and Resources Institute

2. Implementing Organizations

- Air and Waste Management Association
- American Association for the Advancement of Science
- American Consulting Engineers Council
- Bankers' Association for Foreign Trade
- Center for Trade and Investment Services, USAID
- Council of State Governments
- K&M Engineering and Consulting Corporation
- Louis Berger International Inc.
- Management Systems International
- National Association of State Development Agencies

- Overseas Private Investment Corporation
- Tata Energy and Resources Institute
- The Asia Foundation
- The Nature Conservancy
- Tropical Research & Development
- U.S. Department of Commerce - U.S. & Foreign Commercial Service
- U.S. Department of Energy - Pittsburgh Energy Technology Center
- U.S. Environmental Protection Agency
- U.S. Environmental Training Institute
- U.S. Fish and Wildlife Service
- U.S. Trade and Development Agency
- Water & Environment Federation
- Winrock International
- World Environment Center
- World Resources Institute
- World Wildlife Fund - USA

3. Participating Organizations

See attached 1994 Annual Report for US-AEP.

F. ACTIVITIES SUMMARY

During CY 1994, US-AEP supported a broad range of activities, including:

Environmental Action

designed/implemented by the US Environmental Protection Agency (EPA)

Provides government-to-government assistance to Asian and Pacific nations and territories through environmental action teams, short-term technical assistance, and government personnel training. Environmental action teams bring together US environmental experts to undertake short-term assignments that respond to specific environmental problems at the request of Asian governments. Teams are led by experienced EPA staff and may include members from other federal or local government agencies, international organizations, businesses, and NGOs. Findings are shared with US-AEP partners to coordinate appropriate follow-up activities. EPA technical and policy experts are also available for brief focused missions at the request of Asian governments or field personnel. EPA environmental management training modules assist Asian governments in addressing critical environmental issues. Courses cover risk assessment, environmental economics, environmental policy, enforcement, environmental impact assessment, hazardous waste site assessment/prioritization, environmental audits, and financing environmental investments.

1994: Five action teams, two short term technical assistance, and two environmental training modules took place.

Environmental Business Exchanges

implemented by the World Environment Center (WEC)

Creates opportunities for substantive US-Asian private sector information exchanges. US industry experts travel to Asia to share technologies and expertise with their Asian counterparts. Asian/Pacific professionals travel to the United States to participate in site visits, workshops, and other activities. These exchanges enable Asian industry representatives to draw on US expertise to perform environmental audits, bring small groups of Asian industry officials to meet with their US counterparts to evaluate new and alternative technologies for process control and pollution mitigation, and bring US and Asian industry leaders together to explore challenges posed by environmental concerns and regulations.

1994: Through environmental business exchanges, 149 Asians came to the United States and 51 Americans went to Asia for a program total of 180 Asians and 105 Americans.

Environmental Fellowships

implemented by The Asia Foundation (TAF)

Provides senior-level Asian, Pacific Island, and American professionals with practical work experiences that expand their understanding of environmental problems and solutions. The program places these competitively selected environmental professionals in businesses, NGOs, and government agencies in the United States and in the nations and territories of Asia. Fellowships last one to four months. By building human and institutional capacity and developing trans-Pacific environmental networks, these fellowships are an avenue to improving the environment in Asia and to the possibility of applying US environmental experience, technologies, and practice to facilitate that improvement.

1994: Through environmental fellowships, 89 Asians came to the United States and 25 Americans went to Asia as environmental fellows, for a program total of 143 Asians and 44 Americans.

Environmental Short Term Training

implemented by the United States Environmental Training Institute (USETI)

Provides public and private sector environmental professionals from

Asia with environmental training opportunities in both the United States and the region, and provides US business with opportunities to share their knowledge with Asian professionals. Many USETI participants are in a position to influence environmental practices and policy in their countries. The training provides an opportunity to share important US environmental technological advances with professionals from the Asia/Pacific region. Asians also gain an introduction to US policies and regulatory practices. American public and private sector sponsors, conversely, gain exposure to Asian environmental issues. Through exposure to American technology and ideas, the courses present an opportunity for Asians and Americans to develop mutually rewarding professional relationships, some of which lead to business ventures. All USETI participants join an extensive, worldwide alumni network of environmental professionals.

1994: Two hundred and two Asians and Pacific Islanders participated in environmental short term training, for a program total of 313 participants.

Asia Environmental Business Specialist

implemented by the US Department of Commerce, Trade Information Center, Washington, D.C.

Facilitates environmental improvement in Asia by responding to US firms' inquiries to the Trade Information Center about US government export assistance programs and resources. The Asia environmental business specialist also offers basic information about environmental needs in Asia and the Pacific and referrals to the US-AEP activities that address those needs.

1994: The Asia environmental business specialist was transferred to the staff of the deputy assistant secretary of commerce for environmental technology exports, re-enforcing that linkage between the Department of Commerce and US-AEP.

Environmental Enterprises Development Initiative

designed with/implemented by the US Overseas Private Investment Corporation (OPIC)

Creates opportunities for US environmental enterprises through technology transfer and capital mobilization. The initiative provides grant funds to help US firms undertake pre-investment activities. OPIC and US-AEP seek to stimulate investment by US environmental firms in Asia's rapidly expanding markets for environmental technology, services,
and products. The initiative provides qualified US investors with funding assistance to conduct market-entry assessments, business

plans, technology checks, investor reviews, prototype or pilot project implementation and other pre-investment analyses. OPIC's maximum participation is limited to $100,000 per project, with the US sponsor required to contribute at least 50 percent (25 percent for small businesses) of the cost. Fifty percent of the sponsor's contribution must be in cash.

1994: Several hundred inquiries and five proposals were received since EEDI was initiated in March; one grant has been awarded, others are in the pipeline.

Environmental Technology Network for Asia (ETNA)

designed/implemented by USAID's Global Bureau's Center for Trade and Investment Services (CTIS)

Disseminates environmental business opportunity notices received from US-AEP's Asia-based Technology Cooperation offices to US environmental firms at no charge. Received daily, detailed information about new requirements for energy or environmental products and services and infrastructure projects is matched electronically with firms registered with ETNA. To facilitate prompt responses, these trade notices are faxed within 24 hours to US firms that provide the appropriate goods or services. ETNA also works with a vast network of state development agencies, trade associations, and other multiplier organizations for even greater coverage.

1994: 1,157 opportunity notices were distributed to a targeted data base of over 3,000 environmental companies and multiplier organizations.

Environmental Technology Representatives

designed/implemented with the US Department of Commerce United States & Foreign Commercial Service (US&FCS)

Provides services to assist US firms in introducing responsible environmental products and technologies to decision makers in Asia's public and private sectors. Offices of Technology Cooperation in nine Asian locations -- Hong Kong; Bombay, India; Jakarta Indonesia; Seoul, Korea; Kuala Lumpur, Malaysia; Manila, Philippines; Singapore; Taipei, Taiwan; and Bangkok, Thailand -- are staffed by environmental technology representatives who serve as technical officers for their local environmental market. These offices contribute to improving environmental quality in their respective countries, serve as reliable information sources for local businesses and government entities, alert Asian audiences to relevant technologies being employed successfully in the United States, and identify potential candidates for fellowships,

exchanges, and training. The technology representatives actively promote demand for appropriate environmental products and services, develop market intelligence in various environmental sectors for immediate transmittal to the United States, gather technology opportunities pertinent to promoting US environmental products and services, and foster long-term, mutually rewarding relationships within Asian and US business communities.

1994: Generated 1,157 opportunity notices and catalyzed a minimum of $25,661,175 in US environmental technology transferred to Asia through those opportunity notices, individual business counseling, and organizing meetings between US and Asian firms.

Environmental Trade Finance Program: Access to Export Capital (AXCAP)

designed/implemented by the Bankers Association for Foreign Trade (BAFT)

Provides information about international trade finance, methods of payment, and how to locate banks that offer export finance services; expands public and private sources of trade finance for US environmental companies. Cofunded by the United States Department of Commerce, AXCAP features a comprehensive data base, which serves as a national catalog of banks involved in trade finance. AXCAP callers are connected to a trade specialist who matches their specific needs with the appropriate information from the data base. AXCAP also maintains a national inventory of services offered by government export credit agencies, as well as information on environmental financiers interested in US exporters.

1994: Matched 18 companies 22 times for a total of $65 million in environmental transactions in Asia.

Environmental Technology Fund

implemented by the National Association for State Development Agencies (NASDA)

Provides grants to facilitate the transfer of environmentally responsible and
energy-efficient technologies from the United States to Asia. The objectives are to improve quality of life and environment for Asians and to help stimulate demand for US technologies that result in job growth for Americans. Small- and medium-sized businesses in the environmental/energy sectors that need resources to assist in demand creation in selected countries may be eligible to receive environmental/energy technology fund grants up to a maximum of $20,000. Grants match from 20 to 50 percent of total project costs

and may be used to fund projects in 34 Asian and Pacific Island nations and territories.

1994: In two year, 104 grants have been awarded, generating $234 million in environmental technology transfers by the US private sector to Asia and the Pacific.

Infrastructure Finance Advisory Service (IFAS)

implemented under contract with K&M Engineering and Consulting Corporation

Provides information and advisory services to US firms interested in pursuing environmental and energy infrastructure projects in Asia and analyzes projects in Asia to assess appropriate project finance sources. IFAS is a cooperative effort of USAID, EXIM, OPIC, US Trade and Development Agency (TDA), and the US Small Business Administration (SBA). For Asia, IFAS focuses on: providing energy and environmental project information, identifying US government technical resources to enhance the competitiveness of US companies bidding for energy and infrastructure projects in Asia, and helping to identify and evaluate US government and commercial sources of finance. IFAS serves US equipment manufacturers, contractors, project developers, and service providers that are interested in bidding on public tenders, developing private Build-Own-Operate (BOO) or Build-Operate-Transfer (BOT) projects, or establishing joint ventures.

1994: IFAS is facilitating long-term projects, among them, assisting a US incinerator company in moving forward several proposals in Korea, arranging environmental business exchanges that support study teams examining hydrogen sulfide deposits related to a Philippine geothermal energy project, and aiding discussions among a US developer, Korean municipal government officials, and US financing agencies for a proposed wastewater treatment facility.

Urban Environmental Infrastructure Program

implemented with USAID's Global Bureau's Office of Environment and Urban Development and the USAID Missions in Indonesia and Thailand

Facilitates the development of urban environmental infrastructure and promotes an emerging public/private partnership in the delivery of municipal services. The program encourages significant US participation in the construction, operation, and delivery of municipal urban services, in part, by providing innovative financing support through the USAID Housing Guarantee Program. US-AEP urban infrastructure advisory offices are open in Jakarta, Indonesia, and Bangkok, Thailand. USAID Missions in Indonesia and Thailand have signed bilateral Housing Guarantee agreements with

the Government of Indonesia and the Royal Thai Kingdom to finance urban infrastructure projects. These agreements provide funding for public projects with public or private financing and in the future are expected to support financing for private Build-Own-Operate (BOO) or Build-Operate-Transfer (BOT) projects.

1994: The urban infrastructure advisors facilitated a range of activities. For instance, the city of Samarang, Indonesia, signed a Memorandum of Understanding with Waste Management International to study the feasibility of establishing a system of integrated services that would be privately built, owned and operated. In Thailand, the infrastructure advisor supported Montgomery-Watson in building a GIS data base for wastewater needs analysis for the Central River Project and contributed to developing a safe landfill for hazardous material on the country's eastern seaboard.

Clean Energy Initiative

designed/implemented with the US Department of Energy (DOE) and USAID's Office of Energy and Infrastructure

Expedites the use of cleaner energy-generating technologies, creates long-term relationships among US and Asian utilities, research institutes, and private industry and enhances cooperation among US government agencies. Pilot programs are under way in India, Indonesia, and Thailand. The initiative focuses on information dissemination, market development, policy reform, and export finance. Priority markets include clean-coal technology, renewable energy, and technologies to improve end-use efficiency.

1994: DOE/ADEPT (Adaptation and Development of Energy Practices and Technology) completed a study of Indian refrigeration technology. An interagency study mission issued a major report analyzing economic and environmental implications of coal washing in India.

Benjamin Franklin Fellows (BFF)

to be designed and implemented by the United States Energy Association and Global Bureau

Will place senior technical management personnel from US industry as advisors to corporate leaders in Asia on up to two-year paid sabbaticals. The first group, from the American electric utility sector, will serve as technical resources for CEOs of utilities in India, Indonesia, the Philippines, Thailand and possibly Korea and Taiwan. Their expertise in such clean energy areas as integrated resource planning, demand side management and renewable energy is intended to improve Asian utility performance with corresponding reduction in greenhouse gas emissions. The Ben Franklin fellowships are part of a $9 million Asian sustainable energy initiative to be

launched in 1995 jointly by US-AEP, USAID's Global Bureau's Office of Energy, Environment and Technology and the USAID Missions in India, Indonesia and the Philippines.

Biodiversity Conservation Network (BCN)

designed with/implemented by the Biodiversity Support Program

Brings together Asian, Pacific, US, or international NGOs, communities, businesses, universities, government agencies, and similar organizations to combat the loss of valuable habitats and to encourage the sustainable use of biological resources in active partnership with local and indigenous communities. BCN provides competitively awarded grants that encourage the development of enterprises that depend on the conservation of local biological diversity for their long-term viability. Projects supported by BCN grants must monitor the social, economic, and biological impacts of this enterprise-oriented approach to community-based conservation. Planning grants enable recipients to embrace a participatory approach to project design among collaborating communities, governmental and nongovernmental organizations, scientists, and enterprises. In addition, planning grants enable collaborators to perform new enterprise feasibility studies and to define long-term biological and socioeconomic monitoring plans. Implementation grants are awarded for periods of up to three years to build on planning grant activities. The regional BCN office in Manila, Philippines, provides technical assistance to proponents and grantees and promotes information sharing across project sites. The Biodiversity Support Program is a consortium comprised of World Wildlife Fund-US, The Nature Conservancy, and the World Resources Institute with core support from USAID.

1994: Three-year implementation grants have been approved for six projects, which will seek to conserve biodiversity in an aggregate land area of about 4,029 square kilometers and improve the quality of life for over 200,000 local people. In addition, 33 feasibility studies have been awarded.

Controlling Trade in Endangered Species

designed/implemented by the US Department of the Interior, US Fish&Wildlife Service

Provides CITES implementation training to scientific, management, and inspection authorities in Bangladesh, India, Indonesia, Nepal, and the Philippines to control the trade of endangered wildlife and wildlife products. The Animal and Plant Health Inspection Service (APHIS) of the US Department of Agriculture, the CITES Secretariat in Switzerland, and the TRAFFIC Network (a joint program of World Wildlife Fund and the World Conservation Union) are also participating.

As 1994 ended, the CITES implementation workshops were being expanded to Taiwan, South Korea, and Malaysia/Singapore for 1995 and 1996.

ASEAN Environmental Improvement Project (EIP)

implemented under contract with Louis Berger International Inc.

Develops partnerships among US and Asian industry and institutions to prevent industrial pollution by introducing environmental management techniques and clean technologies. Closely coordinated with the private sector and in collaboration with USAID mission and other donors' programs, EIP's activities focus on the Association of Southeast Asian Nations (ASEAN) -- Brunei, Indonesia, Malaysia, Philippines, Singapore, and Thailand. An ASEAN-wide, public-private steering committee addresses transnational issues. EIP training and technical assistance resolves industrial pollution problems through waste reduction assessments as a part of strategic environmental management. Assessments concentrate on growth industrial sectors with potential for pollution reduction and the introduction of US technology. These efforts are complemented by a small grants program to strengthen the institutional and technical capabilities of ASEAN-based NGOs to address industrial pollution issues, foster awareness of environmental issues, and improve environmental education. During 1994, EIP, which was a pre-existing USAID regional project, was merged as an element of US-AEP. An even greater amalgamation is planned for 1995.

1994: EIP completed 24 factory environmental assessments for a total of 56 since the project began. EIP also finished reviews of each ASEAN member country's environmental policies, laws and regulations and is currently drawing up a strategy on policy improvements and market-based incentives for each country.

State Environmental Initiative

implemented by the Council of State Governments (CSG), Lexington, Kentucky

Encourages long-term international partnerships in environmental and economic development between US states and Asian/Pacific nations and territories. This three-year initiative, launched in late 1994, promotes the concept that transfers of environmental expertise and technology enhance state economic development and stimulate states to develop appropriate public-private partnerships that meet Asian interest in US environmental experience, technology, and practice. The initiative solicits proposals from state environmental protection and economic development agencies, existing public/private partnerships for environmental protection in the states, university development projects for environmental technologies, and other state-centered efforts. Grants range, on

average, from $120,000 to $150,000 and require a 2:1 dollar or in-kind match by the initiating state. The first proposal submission deadline is June 1, 1995.

Nongovernmental Organization (NGO) Action

Promotes collaborations among a broad spectrum of NGOs, both in the US and Asia and the Asian private sector on projects specifically impacting the urban and industrial (brown) environment.

1994: Convened a "Nongovernmental Organization Business Networking" workshop in Manila. Forty representatives of business, government, and NGOs from Hong Kong, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Sri Lanka, Taiwan, Thailand and the United States met to cross-pollinate ideas, reinforce individual and organizational interaction, establish lasting networks, and get activities started, particularly in the area of pollution prevention.

Environmental Information

in collaboration with United States Information Service (USIS), National Association of State Development Agencies, Air and Waste Management Association (AWMA), and The Asia Society

Disseminates a broad range of environmental information in Asia and the United States.

1994: Traveling information centers featuring US environmental technology were displayed in 26 locations in Asia and the Pacific under the auspices of USIS and US-AEP. US-AEP distributed 20,000 copies of The Green Pages *which lists some 2,000 US environmental companies, and developed and distributed* A Pocket Guide for International Environmental Executives *and* Environment Asia/Pacific: The Executive's Guide to Government Resources. *Timothy E. Wirth, US Under Secretary of State for Global Affairs, discussed US environmental policy at an Asia Society seminar series sponsored by US-AEP. The Second International Comparative Risk Analysis Symposium was held in Taipei, Taiwan, cosponsored by the Taiwan Environmental Protection Administration, EPA, the Foundation of Taiwan Industry Service, AWMA, and US-AEP.*

PART II

PROPOSED STRATEGY, RATIONALE, AND KEY ASSUMPTIONS

PART II: PROPOSED STRATEGY, RATIONALE, AND KEY ASSUMPTIONS

A. SHARPENING THE FOCUS

The recent evaluation of the US-AEP Project (organized by the Secretariat's quality assurance contractor, MSI, and Winrock International) urged greater focus in the breadth of project activity. Theoretically this could be accomplished by limiting the number of countries and/or environmental issues. Indeed, there has been an increasing focus on the advanced developing and industrializing countries in the region and on a set of four environmental issues (i.e., industrial pollution, energy efficiency, environmental infrastructure, and biodiversity conservation). The Secretariat has also refined its distinctive approach and recently begun to articulate "decision rules".

Nevertheless, and following intense discussion, it was determined by the ANE Bureau to base the proposed strategy for 1995 - 2000 on a constraints methodology. A summary analysis follows.

STRATEGIC FRAMEWORK

1. Economic and Population Growth

The Asia region, and particularly East Asia, has achieved remarkable success in its pursuit of economic growth, reductions in poverty, and equity. Indeed, East Asia is increasingly the development model for the Asia region and for other countries seeking to reform economic and development systems. While there are differences among countries, it seems clear that macroeconomic stability, export-oriented trade, high productivity small-holder agriculture, and large public sector investments in infrastructure, education, and health, particularly primary education and primary health, when combined with strong financial systems, have yielded broad-based and rapid economic growth in East Asia.

2. The Environment

Yet rapid economic growth in the region has come at the expense of the environment. Five of the seven most polluted cities in the world are in Asia and the toxic intensity of industrial production is rising at an alarming rate. Both the pollution intensity of energy generation and the energy intensity of industrial use are higher in Asia than elsewhere. Rapid urbanization has resulted in a dangerous lag in the organization of environmental infrastructure. And the region faces a post-Green Revolution challenge reflected in the growing application of chemicals needed to meet increased demand for agricultural products.

3. Sustainable Development

The stark contrast between economic performance, population growth, and environmental quality defines the Asia region as an important test case for sustainable development. And because other countries in the region are emulating East Asia's success formula, the challenge for sustainable development will be compounded over the next decade. Unless further economic growth in the region is "cleaner," and unless new approaches to the provision of environmental infrastructure are assured, the implications for people's lives and the resource base in Asia (if not the world) are dire. These potential consequences have serious implications for how USAID and others think about sustainable development and what they do to promote it in the Asia region.

4. Strategic Choices

Which of the many development and environmental problems in the region ought to be tackled? What can USAID do with regard to agricultural, energy, and industrial pollution, about the growing disparity between urban growth and environmental infrastructure, about global warming, or the loss of biological diversity? And, in which countries? Rapid economic growth defines the issue in both the advanced developing and industrializing countries, even as the case for usual development assistance is weak. Growth issues are less prominent among the developing countries, although environmental problems abound, and the case for development assistance is strong. In this circumstance, any development strategy needs to reflect equal measures of pragmatism and simplicity.

- unless and until sustainability concepts are incorporated among the development goals of countries in the Asian region, the prospects for improvements in environmental quality will remain limited. Once embedded in public consciousness and policy, however, the economic structure of most countries in the region will facilitate the rapid transmission of environmental signals to decision makers. Incentives work in Asia.

- the industrial stock in East Asia is doubling every five years, and by 2010 as much as 85 percent of that stock will be new as measured from today. This remarkable phenomenon, taken together with the very real potential for "partnership" approaches to development promotion in the region, underscore both the importance and opportunity to launch a "clean revolution" in the industrial sector in East Asia. It also suggests the rationale for configuring a continuing development relationship with the advanced developing and industrializing countries in the Asia region.

- rapid industrial growth among the advancing countries in the region is already having a negative impact on the developing countries (e.g., technology hand-off in low-wage grey-goods sectors like textiles). This dangerous situation underscores the case for work in the industrial sector even among the less advanced countries in the region (perhaps with a greater emphasis on waste minimization and pollution prevention). Note that the pressure on agro-industrial systems is equally present in both the advancing and developing countries.

- as a consequence of adopting rapid growth models, most urban areas in the Asia region are falling behind in the provision of environmental infrastructure (i.e., clean water, waste water, solid and hazardous waste disposal, etc.). This is because industrial growth is outstripping the institutional and financial structures of governments, particularly among the developing countries in the region. Moreover, this deficiency is, of course, felt more by the urban, and urbanizing, poor in these societies. The rich have always provided such amenities for themselves through private means.

Given the pressure on USAID resources, agency policy with regard to country presence, and the range of development activities already supported bilaterally and by the Global Bureau, US-AEP should also define a distinctive approach (e.g., a partnership approach), which can be distinguished from other development approaches (e.g., development cooperation as contrasted with development assistance), which assures financial leverage, and which offers the promise of sustainability in delivery. The US-AEP is not ANE's "all things" environmental project, but rather an important test of alternative approaches to development promotion in an important and distinctive regional context.

5. Consequences for the Project

Is there any difference in the proposed strategy from before? Yes. *First*, the strategy is linked to specific development issues (i.e., the absence of a sustainability ethic throughout the region, and the environmental consequences of rapid economic growth). Earlier, US-AEP was directed to a much more open-ended range of environmental issues.

Second, strategic objectives are proposed (substituting for both components and environmental foci), each linked to a distinctive development or environmental issue. *Third*, work in nonpresence countries is limited. *Fourth*, as will be further described, country analyses will be required for each country of engagement.

US-AEP OBJECTIVE TREE

Agency Goals:

Encouraging Broad-Based Economic Growth

Building Democracy	Protecting the Environment	Protecting Human Health
Strategic Objectives:		
Sustainable development as a national goal throughout Asia Across Asia, as determined by country analysis	Increasingly efficient and less polluting industrial regimes in Asia - In a limited number of USAID presence and non-presence countries	Increased environmental systems and services available to poor households in urban areas in Asia - In USAID presence countries
Program Outcomes:		
Widespread commitment to and adoption of sustainable development approaches, plans and policies	Strengthened & expanded incentives for environmental quality	Strengthened and expanded incentives for private and community investment in environmental systems and services in urban areas
Widespread commitment to and adoption of environmental management practices	Increased use of environmental considerations in business decision-making	Reduced market imperfections to increase technology transfer between the US and Asia to increase US investment in potable water systems and services in Asia
Increased participation of individuals, communities, NGOs and businesses in environmental activities	Significant reductions in market imperfections to facilitate an increase in environmental technology transfer from the US to Asia	
Increased awareness of sustainability and environmental issues	Significant reductions in market imperfections to facilitate an increase in environmental infrastructure investment for industrial waste from the US to Asia	Reduced market imperfections to increase technology transfer between the US and Asia to increase US investment in sewerage and solid waste disposal systems and services in Asia

US-AEP activity will be differentiated in each country depending on the outcome of these analyses.

Fifth, open-ended, non-market, biodiversity conservation (and some other blue and green issues) are no longer considered within the scope of the project. The rationale for this decision is largely to be found in the distinctive approach taken to implementation (i.e., relying on demonstrably proven or relevant U.S. experience, practice, or technologies; significant cost-share from partner organizations; and the prospects for sustainability in delivery). Indeed, these criteria serve to focus the project on the "marketplace" as the medium for development cooperation and technology exchange. *Sixth*, management objectives are incorporated in the strategic plan and will be subject to performance measurement.

B. STRATEGIC OBJECTIVES

Agency Goals

Encouraging Broad-Based Economic Growth
Building Democracy
Protecting the Environment
Protecting Human Health

Strategic Objective 1: *sustainable development as a national goal throughout Asia.*

Strategic Level Indicator:

- number of countries making an explicit commitment to sustainable development goals.

Program Outcome 1.1: *widespread commitment to and adoption of sustainable development approaches, plans, and policies.*

Indicators:

- number of countries adopting specific policies in support of sustainable development goals;
- number of countries adopting specific methodologies for developing planning in support of sustainable development goals (e.g., natural resource accounting);
- number of countries signing international treaties, or other multi-country approaches, relating to global environmental problems.

Program Outcome 1.2: *widespread commitment to and adoption of environmental management policies.*

Indicators:

- number of countries with articulated environmental regulatory regime (at or approaching international standard);
- number of countries aggressively exploring alternatives to "command and control".

Program Outcome 1.3: *increased participation of individuals, communities, NGOs, and businesses in environmental activities.*

Indicators:

- number of NGOs committed to environmental goals;
- number of industry associations committed to environmental goals;
- number of NGO-government collaborations;
- number of NGO-industry collaborations;
- number of government-industry collaborations;
- number of NGO-government-industry collaborations.

Program Outcome 1.4: *increased awareness of sustainability and environmental issues.*

Indicators:

- number of media articles and programs directed to environmental issues;
- number of curricula for environment at all levels of education;
- public opinion polls.

Strategic Objective 2: ***increasingly efficient and less polluting industrial regimes in Asia.***

Strategic Level Indicators:

- increased efficiency per unit of output (decreased resource intensity);
- reduction of industrial pollution per unit of economic output;
- increasing proportion of industrial waste treated/ managed (to increase efficiency and reduce pollution);
- decrease in the toxicity of industrial production materials;
- decrease in the toxicity of industrial waste materials.

Program Outcome 2.1: *strengthened and expanded incentives for environmental quality.*

Indicators:

- ISO (or similar international/regional accreditation authority active in each target Asian country;
- number environmental auditors certified and operating in each target country;
- number of environmental committees within industrial associations of each target country;
- number of U.S. industries with articulated policy on environmental criteria for Asian suppliers;
- number of financial and insurance institutions with environmental criteria for lending and investment;
- number of countries with evidence of eco-labeling;
- number of Asian governments with an environmental policy relating to procurement;
- number of Asian industries having environmental policies for neighbors and suppliers;
- number of Asian governments credibly enforcing environmental rules and regulations.

Program Outcome 2.2: *increased use of environmental considerations in business decision-making.*

Indicators:

- number of Asian companies accredited through ISO (or similar membership/certification;
- number of Asian businesses in multinational supplier programs;
- number of Asian companies having environmental units/programs/staff;
- number of participants in industrial environmental training activities;
- number of Asian businesses participating in corporate environmental committees;
- number of Asian companies participating in Demand Side Management programs.

Program Outcome 2.3: *significant reduction in market imperfections to facilitate an increase in environmental technology transfer from the United States to Asia.*

Indicator:

- systems for transmitting information on Asian environmental conditions and opportunities established and maintained.

Sub-Indicators:

- functioning system for transmitting trade leads;
- increased number of trade leads;
- increased number of U.S. technology; sales/contracts/joint venture agreements
- Increased information and assessment/analysis of Asian industrial/environmental sectors (sectoral and market surveys).

Indicator:

- systems for transmitting information on U.S. environmental experience, technology and practice to Asia established and maintained.

Sub-Indicators:

- number of technology demonstrations;
- number of technology familiarization exchanges;
- number of U.S. data bases available in Asia.

Indicator:

- professional and institutional linkages established and maintained.

Sub-Indicators:

- increased number of U.S. to Asia linkages established with:
  industry associations,
  environmental NGOs,
  state government agencies,
  federal government agencies.

Indicator:

- systems in support of international trade, enterprise and infrastructure finance established and functioning.

Sub-Indicators:

- access to finance programs for international trade;
- access to finance programs for enterprise finance;
- access to finance programs for infrastructure finance.

Indicator:

- technology transfer as measured by sales, contracts, or joint ventures, or licenses.

Sub-Indicator:

- quantification of efficiency and pollution effects in Asian industry.

Program Outcome 2.4: *a significant reduction in market imperfections to facilitate an increase in environmental infrastructure investment for industrial waste from the United States in Asia.*

Indicators:

- increased number of U.S. technology sales/contracts/ licensing agreements/joint venture agreements related to industrial waste;

- quantification of capacity for treating industrial waste.

Strategic Objective 3: ***Increased environmental systems and services available to poor households in urban areas in Asia.***

Strategic Level Indicator:

- percentage of population of urban and peri-urban areas with access to potable water, sewerage and solid waste disposal services

Program Outcome 3.1: *strengthened and expanded incentives for private and community investment in environmental systems and services in urban areas.*

Indicators:

- number of private sector financed water projects proposed by governments;
- number of private sector financed household waste disposal projects proposed by governments;
- number of specialized financial intermediaries supplying credit for community and household water and waste disposal systems.

Program Outcome 3.2: *reduced market imperfections to increase technology transfer between the U.S. and Asia to increase the U.S. investment in potable water systems and services in Asia.*

Indicator:

- systems for transmitting information on Asian environmental conditions and opportunities established and maintained.

  Sub-Indicators:

  - functioning system for transmitting trade leads;
  - increased number of trade leads;
  - increased number of U.S. technology sales/ contracts/ joint venture agreements;
  - increased information and assessment/analysis of Asian industrial/environmental sectors (sectoral and market surveys).

Indicator:

- systems for transmitting information on U.S. environmental experience, technology and practice to Asia established and maintained.

  Sub-Indicators:

  - number of technology demonstrations;
  - number of technology familiarization exchanges;
  - number of U.S. data bases available in Asia;

Indicator:

- professional and institutional linkages established and maintained.

  Sub-Indicators:

  - increased number of U.S. to Asia linkages established with:
    industry associations,
    environmental NGOs,
    state government agencies.

Indicator:

- systems in support of international trade, enterprise and infrastructure finance established and functioning

Sub-Indicators:

- access to finance programs for international trade;
- access to finance programs for enterprise finance;
- access to finance programs for infrastructure finance.

Indicator:

- technology transfer as measured by sales, contracts, or joint ventures.

Sub-Indicators:

- quantification of improved availability of potable water in urban areas of Asia

Program Outcome 3.3: *reduced market imperfections to increase technology transfer between the U.S. and Asia to increase U.S. investment in sewerage and solid waste disposal systems and services in Asia.*

Indicators:

- see 3.2 above

Strategic Objective 1
sustainable development as a national goal throughout Asia

Introduction

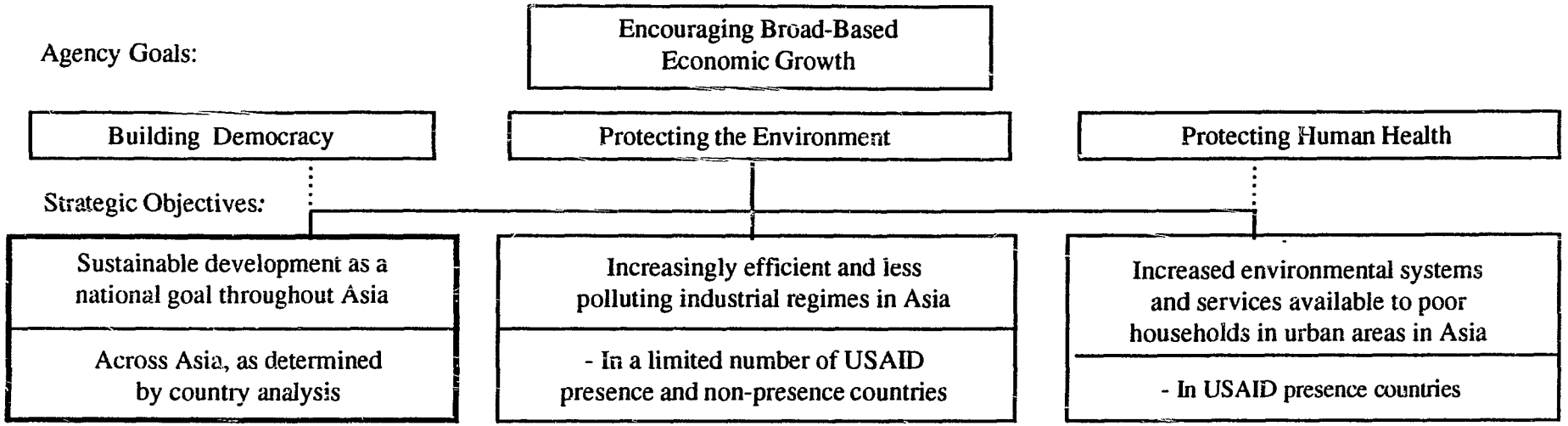
Very rapid economic and population growth, radical structural change, the craving for steady increases in per capita income, the determination to eliminate poverty, and other development pressures put enormous strain on environmental systems. Even where the initial development experience has been successful, as in East Asia, there is concern that it cannot be sustained. As suggested earlier, pollution, resource degradation, resource inefficiency, deficits in environmental infrastructure, global warming, and the loss of biological diversity lead to questions about the sustainability of economic development trends in the Asia region and give a sense of urgency to rethinking the economic development concept.

As noted earlier, with the sole exception of Singapore, there is as yet no single government in Asia explicitly committed to sustainable development as a national goal. Until the countries in the Asian region incorporate sustainability concepts in their development plans and policies, the prospects for improvement in environmental quality will remain limited. Once incorporated, however, the economic structure of most countries in the region will facilitate the rapid transmission of environmental signals to decision makers. Incentives work in Asia

The simple notion that GNP growth alone will result in "development" must be abandoned, and the goals of economic policy must become more diverse. As a part of this process, key macroeconomic policies must be reconsidered. It is no longer prudent, for example, to contemplate exchange rate adjustments, changes in major tax or tariff structures, new public sector infrastructure investment programs, or expenditures on research programs without carefully considering the environmental impacts that will result. Similarly, environmental management policies must be reconsidered to take account of local capacity, international experience, and the power of decentralized economic incentive systems.

Economic decision makers must increasingly recognize the links between economic and environmental policies and goals. As policies are fashioned, diverse objectives must be made explicit. Part of the approach is intellectual (i.e., introducing new concepts, analytic tools, methodologies, etc.), the other part political. The important lesson from the American experience is that until the public becomes broadly informed and actively engaged, and until environmental management policies are broadly applied, there will be little prospect for change in the development regime.

US-AEP OBJECTIVE TREE - activities for SO #1



Program Outcomes:

Activities Under Strategic Objective 1:

Program Outcomes:	Activities Under Strategic Objective 1:
Widespread commitment to and adoption of sustainable development approaches, plans and policies	- Environmental Exchange Program (IIE)
Widespread commitment to and adoption of environmental management practices	- Environmental Exchange Program (IIE) - NGO-Business Partnership (TAF)
Increased participation of individuals, communities, NGOs and businesses in environmental activities	- Environmental Exchange Program (IIE) - Air & Waste Management Association Grant - Water & Environment Federation Grant
Increased awareness of sustainability and environmental issues	- Environmental Exchange Program (IIE)

Strategy

ANE's first development objective for the US-AEP is to reinforce sustainable development as a national goal throughout Asia. This new objective should be the fundamental bedrock of the US-AEP program, underlying other more targeted objectives. It draws from the United States environmental experience, although it is intended to strengthen movement towards sustainability in each eligible and participating country in a way that is consistent with national direction. To achieve the objective, the Secretariat has identified four key outcomes:

- First, it is important for each country in Asia to include ***sustainability*** as an explicit major goal in its economic development plan and to adopt new approaches to development and the environment. The urgency of the goal is underscored by the fact that not a single country (with the exception of Singapore) in the region has yet to do it.

- Second, it will be necessary to rationalize the approach to ***environmental management*** throughout the region. Most countries in Asia already have extensive environmental legislation (much of it modeled on our National Environmental Protection Act); yet, most legislation is only rarely or selectively enforced. This lack of enforcement is of concern not only because environmental degradation is occurring at an accelerating rate but also because failure to apply laws already in place undermines the efficacy of all attempts to improve the situation. While one can debate the merits of "command and control," it seems clear in Asia that many of the difficulties associated with environmental protection could be mitigated and greatly reduced by using regulations in combination with the decentralized flexibility of economic incentive systems. The challenge is to combine the efficiency enhancing characteristics of the economic and regulatory measures in a complementary way, so as to match the manpower and technical capabilities of national and local governments to their environmental management requirements.

- Third, most environmental problems cannot be solved without the active ***participation*** of the local or national citizenry. Participatory approaches to environmental stewardship offer three main advantages: they give planners a better understanding of local values, knowledge, and experience; they win community backing for government objectives and community help with local implementation; and they can help resolve conflicts between different interests, institutions, and organizations. There are clear advantages to empowering indigenous institutions and local voluntary organizations, increasing access to information, and promoting institutional reform in the direction of improving participation. Indeed, participatory initiative has been at the very heart of the environmental movement in the United States and is an important output target under this objective.

- Fourth, ignorance is an important cause of environmental damage and a serious impediment to finding solutions. This principle holds for international negotiations and poor households alike, as illustrated by the global damage done to the ozone layer by CFCs and by the serious implications of indoor air pollution for family health. It is necessary, first, to know the facts; second, to determine values and analyze the benefits and costs of alternative measures; and third, to ensure that information is available to inform public and private choices. In sum, ***public awareness*** of environmental and sustainability issues is an important output target under this objective.

Decision Rules

This new emphasis for US-AEP will be directed to all countries in the region since the issue of sustainability is a regional issue, since regional organizations can lend important access for policy dialog, and since engagement in policy is highly leveraged. In making country choices, however, the overall 20/80 division between nonpresence/presence countries will be maintained as will the more stringent contribution requirements for nonpresence countries.

Activity under SO1 is not limited to any specific set of environmental issues (e.g., industrial pollution), rather is more open-ended, focusing on sustainability issues and the underlying institutional support for sustainability, including blue, brown, and green environmental issues. Indeed, it is proposed that US-AEP continue to operate as an open system, demand-driven, and susceptible to suggestion and initiative from the field and from outside the agency.

The US-AEP Secretariat will organize a "country assessment" for each country of major operations (i.e., Bangladesh, Hong Kong, India, Indonesia, Malaysia, Mongolia, Nepal, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, and Thailand). The assessment will include a summary review of the climate for sustainability, including reference to national commitment, as well as the current status and prospects for public policy, participation, and awareness. These reviews will be coordinated with other SOs. In all cases, assessments will draw on existing materials (and in presence countries on the strategic plans and sectoral assessments prepared by USAID missions). Pilot assessments will be conducted over the next several months as described later in this document.

As a fundamental operating principle, the following basic criteria will be applied to activity under SO1: (i) all activity must reflect United States experience or practice; (ii) there must be a reasonable case that the experience or practice is likely to take hold or be sustainable in the Asia setting; (iii) transferring organizations must make a significant cost contribution; (iv) transferring organizations must demonstrate the intent of pursuing

a long-term engagement or partnership with an Asian counterpart; and, (v) each activity or implementation event must demonstrate, on a comparative basis, greater potential for impact than other proposals (e.g., nearer-term vs. longer-term impact, sectoral vs. transactional impact, larger vs. smaller environmental impact, etc.).

Finally, and as the program develops (at least, every six months), the Secretariat will take stock of what has been undertaken to determine whether it would be useful to promote demand in a specific sphere, against a particular environmental problem, or favoring any particular United States experience or practice.

Program Outcomes

In order to monitor SO1, the Secretariat will measure the number of countries making explicit their commitment to sustainable development goals. In addition, the Secretariat seeks results in four linked program outcomes: (1) widespread commitment to and adoption of sustainable development approaches, plans, and policies; (2) widespread commitment to and adoption of environmental management policies; (3) increased participation of individuals, communities, NGOs, and businesses in environmental activities; (4) and increased awareness of sustainability and environmental issues. Note that the four outcomes are sequentially linked from awareness to participation to changes in public policy.

Note also the Secretariat is obviously not arguing that USAID input alone will result in these outcomes. On the other hand, the Secretariat does not shy away from its ambition to catalyze self-generating and self-sustaining momentum in the direction of the desired outcomes.

> **Program Outcome 1.1**: widespread commitment to and adoption of sustainable development approaches, plans, and policies.

This is a critical outcome, one where collaboration with other agencies and departments of the federal government and with international professional organizations and NGOs may have high pay-off. There are any number of international and national fora where the opportunity to pursue this outcome are possible. Illustratively, the Environmental Protection Agency has a collaborative relationship with Taiwan where there will be opportunity to pursue this outcome; United States government agencies in India have developed a "Common Agenda" with the Indian government which suggests yet another venue; the Government of Singapore, as a member of ASEAN, APEC, and prospective member of NAFTA, has been championing sustainability concerns to its regional neighbors, suggesting yet another opportunity to pursue this important outcome. Each of these openings suggests an opportunity to promote Program Outcome 1.1

Key Assumptions

The United States will continue to champion sustainability as part of its foreign policy goals, and Asian countries will remain open to enthusiastic collaboration with United States professionals, agencies, departments, NGOs, and corporations in the pursuit of national development and environmental goals. In this regard, it is important to note that US-AEP is designed to foster international partnership, not to develop and sustain new independent local capacity.

Program Outcome 1.2: widespread commitment to and adoption of environmental management policies

It is important to underscore here our understanding that environmental degradation in Asia is caused not only by large development and industrial projects, but also by the combined effect of countless individual, household, and small business decisions. This suggests that the most desirable environmental management regime will emphasize decentralized decision making and extensive use of economic incentives to internalize environmental externalities. There is enormous capacity within the United States, reflected in our universities, not-for-profit think tanks, state environmental protection agencies, and the Environmental Protection Agency, Department of Energy, etc. to collaborate with Asian counterparts in assessing alternative approaches to environmental management, developing new approaches, and strengthening capacity.

Key Assumptions

That important sources of expertise in the United states will be willing to enter into long-term professional and institutional relationships across Asia with a view to sharing experience, exploring new approaches to environmental management, mentoring, and building new capacity after initial support from the US-AEP.

Program Outcome 1.3: increased participation of individuals, communities, NGOs, and businesses in environmental activities.

This is an important element of the strategy, albeit a difficult one for an "outside" development organization. Nevertheless, the Secretariat believes there is a wide range of environmental experience and practice from the United States that can be relevant in Asian settings. Illustratively, during 1994, the Secretariat organized a regional workshop on business/NGO collaboration. Drawing on the collaborative program between McDonalds and the Environmental Defense Fund to improve fast-food packaging, the Secretariat was able to secure enough support from across the region to launch a small grants program in support of similar collaborations. Examples like this, carefully introduced, could have a major impact in changing the prospects for moving beyond compliance in the region.

Key Assumptions

That the secretariat will be able to identify relevant participatory experience and practice in the United States that might find resonance in Asian settings. In this regard, it is important to note that US-AEP is designed to transfer experience and to broker international partnership, not to develop and sustain new independent local capacity.

Program Outcome 1.4: increased awareness of sustainability and environmental issues.

Well-informed citizens are in a better position to put pressure on governments and on polluters and are more likely to accept the costs and inconvenience of environmental policies. In Kuala Lumpur, Malaysia, a combination of an energetic mayor, a committed municipal government, and an informed and involved public have led to many environmental innovations and an improved quality of urban life in this city of 2 million. Public transport is used by an increasing proportion of the public, green spaces have been expanded, recycling is widely practiced, and industrial location and product mix are carefully chosen to minimize pollution. While picking targets, and identifying partners, must be carefully scripted, there are possibilities for collaboration between U.S. and asian NGOs, universities, public television stations, etc. Any one of these could be the catalyst for important change.

Key Assumptions

That important U.S. institutions and organizations will see mutual benefit in partnerships to affect environmental awareness in the Asia region.

Resource Requirements

Approximately $2.8 million in FY 1996 and $2.5 million in FY 1997 (ENVT) will be required to achieve these program outcomes. This is a very modest request, relying heavily on the ability of the Secretariat to catalyze self-generating and self-sustaining development momentum. Several ongoing activities are included within this request (in total or part): NGO/Business Exchange, ASEAN Environmental Improvement Project, and support to the Air and Waste Management Association, Water & Environment Federation, Conservation in the International Trade in Endangered Species with the U.S. Fish and Wildlife Service, a Conservation Exchange Program with the Smithsonian Institution The new contract for the Environmental Exchange Program (EEP) with the International Institute of Education (IIE) will also be used. Technical Support costs are included in the requirements estimate.

Budget Cut Scenarios

If budget cuts are made in this area, the Secretariat will reduce funding from the ASEAN EIP and discontinue plans to increase the reach of professional organizations in Asia, consolidating programming through EEP. And, if budget cuts persist, the Secretariat would limit the number of countries based on the opportunity for near-term impact as discussed under Decision Rules above.

Implementation and Staffing

The US-AEP Secretariat has six DH positions (i.e., 2 director level positions, one in washington and one in Manila; 1 program and 1 project officer positions; a 1 program and 1 executive assistant positions). The Secretariat is also supported by arrangements with the United States Department of Agriculture and Environmental Protection Agency. It is also supported by contractual and cooperative arrangements with the International Resources Group (IRG) and Louis Berger International for technical support, Management Systems International (MSI) for quality control, Winrock International for evaluation, and the Tata Energy and Resources Institute (TERI) for strategic planning and institutional networking. Secretariat and technical support staff are allocated proportionately across SOs. With regard to SO1, IRG will assign one senior technical person to Manila and support an objectives coordinator in Washington, D.C.

In addition, the Secretariat is considering an implementation arrangement with an international development organization for performance measurement at the SO level. The Secretariat believes that constructed properly, this effort could constitute a useful addition to the policy/awareness outcomes outlined above.

Complementarity With Other Federal Government and Agency Partners

Collaboration with the Environmental Protection Agency, United States Department of Energy and Department of State, and Office of Technology Assessment are very important as suggested in the discussion above. Given that situation, the Secretariat will seek to reorganize an interagency consultative arrangement directed to SO1. It will also be important to work with Global and ANE field missions. As noted, the Secretariat is already working closely with Global's EPAT contractor, Winrock International, and will have to work closely with USAID missions given the country-orientation of program outcomes. Attention is given to collaborative mechanisms in the discussion of management objectives later in this section.

Strategic Objective 2
increasingly efficient and less polluting industrial regimes in Asia

Introduction

The world's environmental future will be determined in large part by what happens in the advancing and industrializing countries of Asia, where economic and population growth and environmental issues are converging most forcefully. In these countries, economic activity has shifted towards industry and manufacturing, multiplying the sources and toxicity of local pollution. In East Asia, industrial production grew by a factor of 8.8 between 1965 and 1990 - compared with 1.5 percent in Germany and 3.9 percent in Japan - and industry's share of total output increased from 32 percent to 45 percent. Carbon emissions from industry, transportation, and energy will be major contributors to global climate change well into the next century.

The urgency and potential environmental benefit of changing the pattern of industrial development in Asia can hardly be overstated. Rapid industrial and infrastructure development is predicted throughout the Asia region. Indonesia, for example, has yet to install 80 percent of the industrial capacity that it will have by the year 2010. If this capacity is built up with environmentally sound technologies, optimism about the region's (and world's) environmental future is in order. If the technological patterns of the past persist, pessimism is in order.

Pollution, resource degradation, and resource inefficiency are legacies of yesterday's practice and technology - products, processes, and systems designed in an age when environmental concerns were largely ignored. Countries in Asia imported this legacy insofar as production technologies and processes were imported from the industrialized countries.

Yet, technology also holds out a solution. Recent revolutionary advances in information systems, telecommunications, biotechnology, materials science, and miniaturization portend a dramatic reduction in materials and energy inputs. Pollution-monitoring and control technologies have matured into an environmental industry in the United States estimated at more than $130 billion. Industrial investment in Asia over the next decade is estimated at a similar level of magnitude, underscoring both the importance and opportunity to launch a "clean revolution" in industry in Asia.

The proposal is to address these issues and opportunities with United States environmental experience, best practice, and technologies generated through new professional and institutional linkages. The US-AEP Secretariat proposes to connect professionals and organizations from the Asia region with counterparts in the United States. Most activities call for cooperation among

governmental, business, and NGO institutions. They do not require massive new transfers of aid or large-scale institutions, relying heavily instead on new relationships within the private and independent sectors, supported and channeled by public activity.

A Clean Revolution

It is increasingly recognized in the United States (and elsewhere among the industrialized countries) that industry must move "beyond compliance" in dealing with pollution issues, from reactive control and remediation strategies to proactive environmental management. These trends emphasize win-win opportunities for business and the environment (e.g., waste minimization, cleaner technologies, and total quality environmental management). These approaches substantially advance the state-of-the-art beyond "end of pipe" cleanup of industrial waste and tackle fundamental threats to environmental health, safety, and well-being.

The US-AEP began its industrial pollution effort in Asia by concentrating on *pollution control* technologies. This was only appropriate in that these technologies are applicable across a broad range of industries, since they concentrate on *end of pipe* (i.e., "black box") solutions based on the containment of the waste stream. Early on, with the work of the World Environment Center, and more recently with the inclusion of the ASEAN Environmental Improvement Project, US-AEP began the move into *waste minimization/ reduction*. It has become increasingly obvious that beyond these reduction efforts come *pollution prevention, clean technologies, total quality environmental management, and total quality management* itself.

These activities and their technological relationships are linked together in a concept which the US-AEP has coined as *The Industrial Technology & Environmental Ladder*, expressed as follows:

THE INDUSTRIAL TECHNOLOGY & ENVIRONMENTAL LADDER

TOTAL QUALITY MANAGEMENT - *total regard for optimizing every aspect of an operation in accordance with TQM principles;*

of which: **and-and-and-and**

TOTAL QUALITY ENVIRONMENTAL MANAGEMENT - *total regard for environmental management throughout the entire enterprise, not just in production (i.e., a matter of organizational culture);*

which encompasses **and-and-and-and**

CLEAN TECHNOLOGIES - *practices which design a product and its packaging with full regard to making them environmentally benign, use of most efficient, least polluting process technologies, optimizing operation of process technologies and employment of the appropriate level of pollution control technologies for those process technologies;*

a higher order function of:
and-and-and-and

POLLUTION PREVENTION - *in production, use of the most efficient, least polluting process technologies, optimizing operation of processing technologies and employment of the appropriate level of pollution control technologies for those process technologies;*

including: **and-and-and-and**

WASTE MINIMIZATION - *in production, optimizing operation of processing technologies and employment of the appropriate level of pollution control technologies for those process technologies;*

constituting an improvement/alternative to:
and-and-and-and

POLLUTION CONTROL - *in production, employment of the appropriate level of pollution control technologies for the process technologies use in production.*

The proposed strategy is intended to suggest the premises for a major developmental and environmental initiative in the Asia region - engaging Asian professionals, governments, industry, nongovernmental organizations in collaboration with counterpart organizations in the United States. The issue certainly warrants a major initiative, akin to the *Green Revolution* in its time; and the Secretariat believes the proposed strategy makes the idea feasible, albeit requiring a new way of approaching development promotion, an approach in keeping with the character of the region, and taking advantage of the power of the new global economy.

Notes: (i) Read the Ladder from the bottom up.
(ii) AND-AND-AND-AND means these levels need to be considered cases of "both/and" situations, not "either/or".
(iii) Process technologies are technologies utilized to manufacture a product. Pollution control technologies are those "environmental" technologies required to deal with polluting effluents or waste products from the manufacturing process.

US-AEP OBJECTIVE TREE - activities for SO #2

Agency Goals:

Encouraging Broad-Based Economic Growth

Protecting the Environment

Strategic Objectives #2:

Increasingly efficient and less polluting industrial regimes in Asia

- In a limited number of USAID presence and non-presence countries

Program Outcomes:

Strengthened & expanded incentives for environmental quality	Increased use of environmental considerations in business decision-making	Significant reductions in market imperfections to facilitate an increase in environmental technology transfer from the US to Asia	Significant reductions in market imperfections to facilitate an increase in environmental infrastructure investment for industrial waste from the US to Asia
- Environmental Exchange Program - Environmental Improvement Project - Industrial Technology for Environmental Management - Environmental Protection Agency - California EPA - Forest Products Laboratory	- Environmental Exchange Program - Environmental Improvement Project - Industrial Technology for Environmental Management - California EPA - NGO-Business Partnership - Benjamin Franklin Fellowship Program	- see next page, under Information, Relationships and Finance	- Activities include those shown under program outcome 2.3, plus: - Infrastructure Finance Advisory Service - OPIC - Environmental Enterprises Development Initiative - Environmental Protection Agency - California EPA

US-AEP OBJECTIVE TREE - activities for SO #2, PO #3

Agency Goals:

Encouraging Broad-Based Economic Growth

Protecting the Environment

Strategic Objective:

Increasingly efficient and less polluting industrial regimes in Asia

- In a limited number of USAID presence and non-presence countries

Program Outcome 2.3:

Significant reductions in market imperfections to facilitate an increase in environmental technology transfer from the US to Asia

Information:

-Environmental Technology Fund (NASDA)
- DOC Technology Representatives
- Environmental Technology Network for Asia
- Environmental Exchange Program
- Environmental Improvement Project
- Industrial Technology for Environmental Management
- DOE/ADEPT
- California EPA
- Clean Energy Initiative (PETC)
- CEO Briefing Series (ETTE)
- LINK Information System

Relationships:

- State Initiatives (CSG)
- NGO-BUsiness Partnership
- Environmental Exchange Program
- Water Environment Federation
- Air & Waste Management Association Grant
- Environmental Improvement Project
- Industrial Technology for Environmental Management

Finance:

- Environmental Trade Finance Program: Access to Export Capital (BAFT)
- OPIC - Environmental Enterprises Development Initiative
- Environmental Exchange program
- Trade Development Agency
- Environmental Improvement Project
- Industrial Technology for Environmental Management

Strategy

ANE's second development objective for the US-AEP is to promote increasingly efficient and less polluting industrial regimes in Asia. This objective is directed to the critical issue for the region's future development (i.e., rapid industrial growth). Note that the growth phenomenon in East Asia has significance for the entire region in, at least, two ways (e.g., the hand-off of dirty technologies from the industrializing countries to low-wage sectors among the developing countries, and the increasing pressure for increased agricultural production throughout the region). The case for U.S. engagement is underscored by the tendency of the EEC and Japan to export used or earlier-generation technologies.

In this circumstance, the significant opportunity for the United States may be to extend the reach of its own experience, best practice, and technology to Asia, creating a "virtual" capability for environmental improvement in the near-term, and defining the United States as the referent for environmental quality over the longer-term. To achieve this objective, the Secretariat has identified three key components:

- The demand profile for environmental goods and services, or clean technologies, in Asia is not only dwarfed by the size of the need, but is also skewed by inappropriate public policy, information deficiencies, and short-sighted investments. Indeed, the incentives in many countries - including environmental regulations and/or lack of enforcement, and/or inappropriate tax policies - inhibit the application of relevant experience, best practice, and technology. Many projects classified as "environmental" are so large, complex, and inflexible that they lock-in a technological status quo. Industrial managers resist environmental improvements as "uneconomic," and many foreign suppliers of technology continue to transfer facilities in turn-key fashion, ignoring both the needs for environmental quality and for recipients to adapt and renew their technological base over time.

Profound structural deficiencies such as these cannot be remedied quickly or with a single approach. Public policy is addressed in Strategic Objective 1. Strategic Objective 2 focuses on changes in the investment profile of the industrial sector. The outcomes projected by the Secretariat are predicated on ***incentives*** that may already exist in the marketplace and which may be promoted, enhanced, and/or refocused through information disclosure, standards of environmental management, and/or transnational diffusion networks.

- The strategy assumes that if the incentives are right, U.S. experience, practice, and technology would flow logically in response to demand throughout Asia. Yet, there are rather obvious imperfections in the marketplace (e.g., too little information about Asian requirements in the United States and too little

information about practice or technology alternatives in Asia; the mismatch between financial resources and vehicles in the areas of trade, infrastructure, and enterprise finance; and the absence of intermediary institutions to facilitate international ***technology transfer)***. Note that market conditions will be different in each country.

- Finally, the strategy addresses the probable lag in business behavior responding to new incentives and/or technology transfer opportunities. In this circumstance, ***business capacity*** becomes important. Although a long list, it may be useful to specify the measures of new business capacity in order to understand the proposed strategy:

  - to recognize environmental management as among the highest corporate priorities and as a key determinant to sustainable development; to establish policies, programs, and practices for conducting operations in an environmentally sound manner;

  - to integrate environmental policies, programs, and practices into management in all its functions;

  - to commit to continuous improvement of corporate policies, programs, and environmental performance, taking into account technical developments, scientific understanding, consumer needs, and community expectations, with legal regulations as a starting point;

  - to promote employee education, training, and motivation to conduct their activities in an environmentally responsible manner;

  - to assess environmental impacts before starting a new activity or project and before decommissioning a facility or leaving a site;

  - to develop products and services that have no undue environmental impact and are safe in their intended use, that are efficient in their consumption of energy and natural resources, and that can be recycled, reused, or disposed of safely;

  - to advise, and where appropriate educate, customers, distributors, neighbors, suppliers, and the pubic in the safe use, transportation, storage, and disposal of products;

  - to design and operate facilities taking into consideration pollution control and prevention, waste minimization, clean technologies, and total quality environmental management;

- to conduct and support research related to environmental quality, the environmental impacts of raw materials, products, processes, emissions, and wastes associated with the business and on the means of minimizing such adverse impacts;

- to introduce emergency preparedness standards and programs;

- to transfer environmentally sound technology and management methods throughout the industrial and public sectors;

- to contribute to the development of public policy and to business, governmental, and intergovernmental programs and educational initiatives that will enhance environmental awareness and protection; and

- to measure environmental performance; to conduct regular environmental audits and assessments of compliance with company requirements, legal requirements, and emerging international principles; and to provide appropriate information to the Board of Directors, shareholders, employees, authorities, and the public.

Decision Rules

This continuing area of US-AEP engagement will be directed principally to a subset of ten countries in the region since not all countries are subject to the rapid growth phenomenon, and since many of the countries are not particularly susceptible to the US-AEP approach. Target countries include Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, and Thailand. Activities may also be directed to Bangladesh, Mongolia, and Nepal in so far as there are situations relevant to the preceding discussion. In rare instances, a small possibility may exist in an individual Pacific Island country. In making country choices, of course, the overall 20/80 division between nonpresence/presence countries will be maintained as will the more stringent contribution requirements for nonpresence countries.

Activity under SO2 is limited to a specific environmental issue (e.g., industrial efficiency and pollution). Within the scope of that issue, however, it is proposed that the US-AEP continue to operate as an open system, demand-driven, and susceptible to suggestion and initiative from outside the agency.

As noted above, the US-AEP Secretariat will organize a "country assessment" for each country of major operations (i.e., Bangladesh, Hong Kong, India, Indonesia, Malaysia, Nepal, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, and Thailand). The assessment will include a summary review of the current status and prospects for improving environmental quality in the industrial sector. These reviews will be coordinated with other SOs. In all

cases, assessments will draw on existing materials (and in presence countries on the strategic plans and sectoral assessments prepared by USAID missions). Pilot assessments will be conducted over the next several months as described later in this document.

As a fundamental operating principle, the following basic criteria will be applied to activity under SO2: (i) all activity must reflect United States experience, practice, or technology; (ii) there must be a reasonable case that the experience, practice, or technology is likely to take hold or be sustainable in the Asia setting; (iii) transferring organizations must make a significant cost contribution; (iv) transferring organizations must demonstrate the intent of pursuing a long-term engagement or partnership with an Asian counterpart; and, (v) each activity or implementation event must demonstrate, on a comparative basis, greater potential for impact than other proposals (e.g., nearer-term vs. longer-term impact, sectoral vs. transactional impact, larger vs. smaller environmental impact, etc.).

Finally, and as the program develops (at least, every six months), the Secretariat will take stock of what has been undertaken to determine whether it would be useful to promote demand in a specific sphere, against a particular industrial problem, or favoring any particular United States experience, practice, or technology.

Program Outcomes

In order to monitor SO2, the Secretariat will measure the following matrices, by country and for the region at large: increases in efficiency per unit of output; reductions in industrial pollution per unit of economic output; increases in the proportion of industrial waste treated or managed; decreases in the toxicity of industrial production materials; and decreases in the toxicity of industrial waste materials.

Note the Secretariat is obviously not arguing that USAID input alone will result in these outcomes. On the other hand, the Secretariat does not back away from its ambition to catalyze self-generating and self-sustaining momentum in the direction of the desired outcomes.

> **Program Outcome 2.1**: strengthened and expanded incentives for environmental quality.

The going-in proposition throughout Asia is the reality of weak and/or distorted demand in support of the principles of environmental management as outlined above. In the context of this strategy, "incentives" are those elements of public policy, industry practice, and community action intended, by virtue either of positive or negative reinforcement, to affect industrial behavior so as to improve environmental conditions, promote

production efficiency, and enhance total quality environmental management. Part of the problem is attributable to deficiencies in regulatory structures and enforcement. The industrial sector, faced with legal constraints often appearing more theoretical than real, is naturally reluctant to commit to environmental management. Beyond the regulatory context, most of the economic development programs of countries in the Asia region have subordinated environmental quality to short-term economic gains. And even where there is environmental motivation, the information base on which market demand rests is often inadequate.

It is proposed herein to focus on those incentives which most likely might affect business behavior towards the environment in the near-term. While some attention may be directed to regulatory structures and enforcement (including activities under SO1), principal attention will be given to market-based incentives, those shaped or supported by government, but importantly those incentives increasingly evident in the marketplace (e.g., ISO or other industry standards, eligibility criteria from insurance and other financial institutions, multinational supplier chain programs, industrial codes of conduct, etc.). The Secretariat also believes that while it is critically important to promote the application of incentives as an objective, it is equally important to use the presence or absence of incentives in specific industrial sectors as a criterion for the application of other technology transfer and capacity building tools.

Key Assumptions

That important parts of Asia's industrial infrastructure is sufficiently market-oriented to receive and respond to market-based incentives for environmental improvement.

> **Program Outcome 2.2:** increased use of environmental considerations in business decision-making.

Changed business behavior by Asian industry concerning the environment is a key outcome. The objective is to improve corporate environmental management performance over time, with a focus on corporate-level policy, systems, and performance measurement programs. The Secretariat intends to assist companies (though industry associations and directly) in evaluating performance relative to the environmental principles outlined above, and specifically with regard to regulatory compliance, implementation of formal environmental management systems, integration of environmental management concerns into general management functions, and assuring a total quality approach applied to operations.

Key Assumptions

The important assumption here is that the Secretariat will be able to leverage broad impact through the marketplace (e.g., promoting U.S. environmental management firms into the ISO training market in Asia).

> **Program Outcome 2.3:** significant reductions in market imperfections to facilitate an increase in environmental technology transfer from the United States to Asia.

Barriers of distance and culture must be scaled in all international transactions. These difficulties are multiplied if markets, information sources, the means of matching potential partners, and financial structures are poorly developed. Although a number of intermediary institutions exist to facilitate international technology transfer, few focus explicitly on environmental technology. Fewer still foster long-term cooperative relationships, as opposed to the short-term sales of goods and services.

Many firms in the United States, particularly of small and medium size, are frustrated because they do not have the information about markets and potential partners in Asia that they need to embark on international ventures with significant environmental benefits. Many firms in Asia are unaware of technological solutions to their problems of environmental degradation or resource inefficiency or cannot connect with external sources of capital and technology even though the incentives for environmental investment are present. And for many firms in both the United States and Asia, there are simply inadequate connections across countries, sectors, and firms to foster effective international technology cooperation. Addressing these market imperfections (i.e., information, finance, and connections) has been a key focus of US-AEP up to this time.

Key Assumptions

That the identified imperfections in the international marketplace for environmental technology transfer have been correctly identified and are subject to relatively near-term resolution and/or will be increasingly addressed by other government, private sector, or NGO institutions.

> **Program Outcome 2.4:** a significant reduction in market imperfections to facilitate an increase in environmental infrastructure investment for industrial waste from the United States in Asia.

The intermediation outcome for industrial waste infrastructure projects is separated from Program Outcome 2.3 to highlight the sectoral differences between industry and waste infrastructure,

particularly with regard to promoting professional and organizational connections and financial structures. On the other hand, it is expected that information systems will overlap. It is not intended to develop specific activities in the areas of incentives or capacity. The key assumptions are the same as for program Outcome 2.3.

Resource Requirements

Approximately $12.5 million in FY 1996 and $9.0 million in FY 1997 (ENVT) will be required to achieve these program outcomes. This is the central core of the request for the US-AEP program. As noted above, there are four program outcomes proposed. At present, the activities funded under the existing Technology Cooperation component predominate (i.e., Technology Representation in cooperation with the U.S. Department of Commerce, Technology Fund with the National Association of State Development Agencies, Environmental Technology network for asia with USAID's CTIS, Environmental Action with the Environmental Protection Agency, and States Initiative with the Council of State Governments).

In the financial intermediation area, there are agreements with the Banker's Association for Foreign Trade which supports trade finance, an agreement with the Overseas Private Investment Corporation which supports enterprise finance, and the Infrastructure Finance Advisory Service (IFAS) which supports environmental infrastructure finance.

The core elements of the former ASEAN Environmental Improvement Project, managed by Louis Berger International from Manila, will increasingly be at the programming center for this SO, emphasizing both incentives and business capacity for environmental decision making.

As with other SOs, the Environmental Exchange Program (EEP) is an important resource available to the team leader for this objective for assuring program outcomes. Fully half of the resources to EEP are charged to this SO.

Budget Cut Scenario

If budget cuts are made to US-AEP, every effort would be made to absorb cuts against other objectives so as to maintain activities and obligations for this SO as much as possible. If budget cuts have to be made in this area, however, support to the two competitive grants programs would be reduced first, technical assistance under the EIP next, and finally through reductions in the numbers of participating countries based on the opportunity for near-term impact as discussed under Decision Rules above.

Implementation and Staffing

A general discussion of staffing is discussed under SO1 and is not repeated here. As noted there, principal support is secured through the EIP contract with Louis Berger International. Two senior staff personnel are already assigned to Manila. A third officer would be assigned to work with the technical support contractor in Washington. In addition, IRG will engage objectives coordinators (2) for industrial efficiency and environmental infrastructure, to be supported by two program associates.

Complementarity With Other Federal Government and Agency Partners

Collaboration with the Environmental Protection Agency, United States Department of Energy and Department of State, and Office of Technology Assessment are very important as suggested in the discussion above. Given that situation, the Secretariat will seek to reorganize an interagency consultative arrangement directed to SO1. It will also be important to work with Global and ANE field missions. As noted, the Secretariat is already working closely with Global's EPAT contractor, Winrock International, and will have to work closely with USAID missions given the country-orientation of program outcomes. Attention is given to collaborative mechanisms in the discussion of management objectives later in this section.

Strategic Objective 3
increased environmental systems and services available to poor households in urban areas in Asia

Introduction

Most countries in the Asia region are falling behind in the provision of environmental systems and services to poor households (i.e., clean water, waste water and solid waste management, etc.). This is because economic growth is way out ahead of government systems and services, and economic reform agendas are putting pressure on government budgets. This is particularly so among the developing countries in the region. It is also possible that environmental infrastructure, with its longer-term planning horizon, is out of sync with demand, encouraging planners to look more carefully at environmental interventions tha can be made at the community and household level.

The public sector has financed most of the region's existing environmental infrastructure. However, as noted above, economic growth and reform agendas across the region have increased the competition for scarce and scarcer public resources. Consequently, the public sector is increasingly turning to privatization as an attractive method of funding infrastructure. Of course, private funding of infrastructure is not a new idea. Railroads, telephone,

and telegraph were long financed by the private sector. Electric power generation is the newer frontier. Water, wastewater, and municipal solid waste projects, however, remain relatively unexplored.

USAID work in Asia suggests that private entrepreneurs are proving more adept at developing quick, innovative solutions to infrastructure and environmental service needs than their more cautious public sector counterparts. The demand for private funding for infrastructure development is stimulating a search for new funding sources and innovative instruments for channeling these funds into long-term project commitments. The principal initial sources have been sponsor equity, commercial banks, supplier credits, and equity from organizations like the IFC and the ADB. More recently, the range of external financing sources has broadened to include institutional investors and private sector infrastructure investment funds. And there is a growing demand for household systems (i.e. on-site water storage, etc.) in the growing urban and peri-urban centers in Asia.

The volume of investment in environmental infrastructure, systems, and services will increasingly depend on the success of these new financial strategies. The engagement of United States firms in the field, then, is not simply a trade strategy. It is fundamentally important to meeting a development need - the investment in environmental systems and services for poor households in urban and peri-urban areas.

Strategy

ANE's third development objective for the US-AEP is to increase the availability of environmental systems and services to poor households in urban areas in Asia. USAID's Global Bureau and USAID missions in four different Asian countries are already collaborating to address this important issue, focusing particularly on build-own-transfer (BOT) or concessionary arrangements as the basis for initial private infrastructure investment. In some of these countries, BOT and other limited public-private partnering arrangements have already provided promising transitions between government ownership and complete infrastructure privatization or concessions, facilitating rapid increases in the scale of private investment and range of managerial and technical support services. The US-AEP has supported such efforts in Indonesia and Thailand.

The US-AEP Secretariat has carefully examined the requirements of U.S. developers and the opportunities to promote the export of U.S. finance, management, and technology for environmental infrastructure. Lessons learned? There is more work to be done on the incentives, policy, and financial structuring side in Asia. While some of this work is being done in the context of large technical assistance contracts, the Secretariat believes there may

be unique opportunities to affect government policy (and roadblocks) in the context of specific projects. This kind of targeted support is ideally suited to US-AEP. Second, the Secretariat has found that on-site intermediation in Asia can be enormously helpful to potential U.S. developers/investors as they seek to "close" large infrastructure projects.

Third, there is an enormous need and opportunity to provide intermediation for U.S. technology suppliers with U.S. and other developers/investors already working and present in Asia. Initially, the Secretariat had sought to provide intermediation services to U.S. developers/investors in the United States - an activity (i.e., Infrastructure Finance Advisory Services - IFAS) which proved unnecessary and which is currently being phased-out. Finally, the Secretariat has identified an important value in professional organizations which can provide fora for making connections as well as becoming important institutional homes in Asia for professional training and upgrading.

Specifically, then, the Secretariat has identified two components:

- Based on the experience of the past three years, the Secretariat has identified the principal advantages to the privatization of environmental infrastructure. These include increased efficiency; access to new sources of funding; more effective technology transfer; greater exposure in the scope and degree of risk involved to government; avoiding the deficiencies of tax collection (a particularly vexious issue in Asia); and the possibility of a greater level of innovative ideas and concepts from the private sector.

Where new projects are involved, the most effective approach to privatization is probably contracting and/or joint venture arrangements (i.e., BOO/BOT). In developing the enabling environment (i.e., ***incentives***) for this kind of investment, Asian governments must consider what should be the relative role of debt and equity; what should be the appropriate balance between country investment and funding from foreign investment and funding; what amount of co-financing from one or more of the international financial agencies is appropriate; to what extent are suppliers credits available, and what are their impacts on project costs, technical feasibility, and financial implications; and where supporting infrastructure is required, what role should be played by government. This is a brief sample of the type of issues which must be addressed and for which "financial engineering" from the United States may be invaluable.

- The strategy suggests that if the incentives are right, U.S. experience, practice, and technology will flow logically in response to demand throughout Asia. Yet, there are rather obvious imperfections in the marketplace (e.g., too little information about Asian requirements in the United States and too little

US-AEP OBJECTIVE TREE - activites for SO #3

Agency Goals:

Encouraging Broad-Based Economic Growth

Building Democracy | Protecting the Environment | Protecting Human Health

Strategic Objectives:

Sustainable development as a national goal throughout Asia	Increasingly efficient and less polluting industrial regimes in Asia	Increased environmental systems and services available to poor households in urban areas in Asia
Across Asia, as determined by country analysis	- In a limited number of USAID presence and non-presence countries	- In USAID presence countries

Activities Under Strategic Objective #3:

Environmental Exchange program -
Environmental Protection Agency -
California EPA -

Program Outcomes:

Strengthened and expanded incentives for private and community investment in environmental systems and services in urban areas

Activities Under PO 2.3 plus:
Urban Infrastructure Development Program/Indonesia -
Urban Infrastructure Development Program/Thailand -
Infrastructure Finance Advisory Service -

Reduced market imperfections to increase technology transfer between the US and Asia to increase US investment in potable water systems and services in Asia

Activities Under PO 2.3 plus:
Urban Infrastructure Development Program/Indonesia -
Urban Infrastructure Development Program/Thailand -
Infrastructure Finance Advisory Service -

Reduced market imperfections to increase technology transfer between the US and Asia to increase US investment in sewerage and solid waste disposal systems and services in Asia

information about practice or technology alternatives in Asia; the mismatch between financial resources and vehicles in the areas of trade, infrastructure, and enterprise finance; and the absence of intermediary institutions to facilitate international ***technology transfer).*** Note that requirements will be different in each country.

Decision Rules

This continuing area of US-AEP engagement will be directed principally to the USAID presence countries since most of the industrializing countries have developed both the incentives and capacity to finance environmental infrastructure. Thailand is a major exception (note also that modest transactions in other East Asian countries may be carried out under Targets of Opportunity). Key countries, then, include India, Indonesia, Philippines, Sri Lanka, and Thailand. Activities may also be directed to Bangladesh and Nepal in so far as there are situations relevant to the preceding discussion.

Activity under SO3 is limited to a specific environmental issue (e.g., environmental systems and services for poor households). Within the scope of this issue, however, it is proposed that US-AEP continue to operate as an open system, demand-driven, and susceptible to suggestion and initiative from outside the agency.

As noted above, the US-AEP Secretariat will organize a "country assessment" for each country of major operations (i.e., Bangladesh, Hong Kong, India, Indonesia, Malaysia, Nepal, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, and Thailand). The assessment will include a summary review of the current status and prospects for improving the reach of environmental infrastructure to poor households. These reviews will be coordinated with other SOs. In all cases, assessments will draw on existing materials (and in presence countries on the strategic plans and sectoral assessments prepared by USAID missions and Global Bureau RHUDOs). Pilot assessments will be conducted over the next several months as described later in this document.

As a fundamental operating principle, the following basic criteria will be applied to activity under SO2: (i) all activity must reflect United States experience, practice, technology, or investment resources; (ii) there must be a reasonable case that the experience, practice, technology, or continuing investment is likely to take hold or be sustainable in the Asia setting; (iii) project organizations must make a significant cost contribution; (iv) project organizations must demonstrate the intent of pursuing a long-term engagement or partnership with an Asian counterpart; and, (v) each activity or implementation event must demonstrate, on a comparative basis, greater potential for impact than other proposals (e.g., nearer-term vs. longer-term impact, sectoral vs. transactional impact, larger vs. smaller environmental impact, etc.).

Finally, and as the program develops (at least, every six months), the Secretariat will take stock of what has been undertaken to determine whether it would be useful to promote demand in a specific sphere, against a particular industrial problem, or favoring any particular United States experience, practice, or technology.

Program Outcomes

In order to monitor SO3, the Secretariat will measure the following indices, by country and for the region at large: the number of private sector financed water, waste water, or solid waste projects proposed by governments, and the number of specialized financial intermediaries supplying credit for community and household systems or services.

Note the Secretariat is obviously not arguing that USAID input alone will result in these outcomes. On the other hand, the Secretariat does not back away from its ambition to catalyze self-generating and self-sustaining momentum in the direction of the desired outcomes.

Program Outcome 3.1: strengthened and expanded incentives for private and community investment in potable water systems.

There are two principal agendas under this outcome. First, it is important to continue working with governments in Asia to establish the very basic principles and conditions for private investment in environmental infrastructure. This may include long-term technical assistance, as the USAID mission in Indonesia is so usefully supporting, and it may include nearer-term intervention to eliminate bottlenecks or underscore incentives in the process of project development. It is the latter where US-AEP may be able to provide comparative advantage (much as it has done in the area of coal washing in India). Second, there is a similar range of work which can be done focused even more directly on community and household systems and services, again in working through the incentive structures (largely financial) to support entrepreneurial and market-based approaches.

Key Assumptions

That governments are, at least, open to considering private sector financing and privatization techniques to the provision of environmental infrastructure, systems, and services to poor households.

Program Outcome 3.2: a significant reduction in market imperfections to facilitate an increase in environmental infrastructure investment for potable water from the United States in Asia.

Barriers of distance and culture must be scaled in all international transactions. These difficulties are multiplied if markets, information sources, the means of matching potential partners, and financial structures are poorly developed. Although a number of intermediary institutions exist to facilitate international technology transfer, few focus explicitly on environmental infrastructure. Fewer still foster long-term cooperative relationships, as opposed to the short-term sales of goods and services.

Many firms in the United States (i.e., developers, consulting engineering organizations, equipment suppliers, system managers, etc.) are frustrated because they do not have the information about markets and potential partners in Asia that they need to embark on international infrastructure ventures. Many firms in Asia cannot connect with external sources of capital and technology even though the incentives for infrastructure investment are present. And for many firms in both the United States and Asia, there are simply inadequate connections across countries, sectors, and firms to foster effective international cooperation. Addressing these market imperfections (i.e., information, finance, and connections) has been a key focus of US-AEP up to this time.

Key Assumptions

That the identified imperfections in the international marketplace for environmental technology transfer have been correctly identified and are subject to relatively near-term resolution and/or will be increasingly addressed by other government, private sector, or NGO institutions.

> **Program Outcome 3.3**: a significant reduction in market imperfections to facilitate an increase in environmental infrastructure investment for wastewater and solid waste management from the United States in Asia.

The intermediation outcome for wastewater and solid waste infrastructure projects is separated from Program Outcome 3.2 to highlight the sectoral differences between water and wastewater infrastructure, systems, and services - particularly with regard to promoting professional and organizational connections and financial structures. On the other hand, it is expected that information systems will overlap. The key assumptions are the same as for program Outcome 3.2.

Resource Requirements

Approximately $3.1 million in FY 1996 and $1.750 million in FY 1997 (ENVT) will be required to achieve these program outcomes. At present, there are three principal activities in support of these outcomes: technical support for intermediation in Indonesia and Thailand, the Infrastructure Finance Advisory Service (IFAS), and

support for the Water & Environment Federation. As with other SOs, the Environmental Exchange Program (EEP) is an important resource available for this objective and for assuring program outcomes.

Budget Cut Scenario

If budget cuts are made to US-AEP, they would be allocated initially to the elimination of IFAS, picking up that work under EEP. If further cuts were required, they would be met through reductions in the numbers of participating countries based on the opportunity for near-term impact as discussed under Decision Rules discussed above.

Implementation and Staffing

A general discussion of staffing is discussed under SO1 and is not repeated here. Principal support is secured through the IFAS contract with K&M Engineering. In addition, a senior technical officer for potable water systems and services will be assigned to Manila. In addition, and as noted under SO2, IRG will engage a team leader for the environmental infrastructure Objectives Teams, to be supported by two program associates.

Complementarity With Other Federal Government and Agency Partners

Collaboration with the Environmental Protection Agency will be very important as suggested in the discussion above. Given that situation, the Secretariat will seek to reorganize an interagency consultative arrangement directed as discussed under SO 1. It will also be important to work with Global and ANE field missions. As noted, the Secretariat is already working closely with Global's Office of Housing and Environmental Infrastructure and RHUDOs and with the USAID missions in Indonesia and Thailand. Attention is given to collaborative mechanisms in the discussion of management objectives later in this section.

C. TARGETS OF OPPORTUNITY

The proposed strategy sharpens the focus of US-AEP. While SO1 is open to a range of related development issues and to blue, brown, and green environmental issues, the focus is still public policy and sustainability. More targeted programs in the blue and green areas are no longer included. Energy is also excluded as a strategic objective. Why?

DISCUSSION

Both the evaluation and feedback from the ANE Bureau (and other parts of USAID) urge greater focus in the breadth of project activity. In adopting a constraints approach, the Secretariat has

organized its thinking around rapid economic growth as a development phenomenon (unique to the region) with serious implications for environmental quality. Analysis identified problems in several areas (i.e., rapid growth in industrial, energy, and agricultural production, and serious lags in the provision of environmental infrastructure). There are also important instances of global environmental problems arising in some countries in the region (e.g., loss of biological diversity, global warming, etc.).

Industrial pollution is proposed as the principal target for US-AEP because of the dimensions of the environmental problem, the danger that it could increase dramatically over the next decade, the unique opportunity to affect improvements in environmental quality through the introduction of clean technologies and principles of environmental management, and the role that the marketplace can play in its resolution. It is important to note that this has also been a very active area of US-AEP activity from the outset.

Similarly, deficiencies or lags in the provision of environmental infrastructure was identified as an important target because of its consequences for poor households and the role that the marketplace can play in its resolution. It is also important to note that this has been a very active area of US-AEP activity from the outset.

After careful discussion, it was determined not to include pollution from the generation of energy (not global warming) as a strategic objective because of the significant commitment already made to the issue by both Global and USAID missions in the field, and because of the scarcity in resources already needed to address the first two issues. Note that this decision does not foreclose US-AEP activity regarding energy efficiency, which will be necessary as a part of its approach to environmental management and quality at the firm level. Efficiency, of course, cannot be easily segregated from the issues of clean technologies nor from issues of environmental management.

Perhaps, most important, it was determined that the BCN project does not lend itself to US-AEP's distinctive approach to implementation (i.e., relying on demonstrably proven or relevant U.S. experience, practice, or technologies; significant cost-share from partner organizations; and the prospects for sustainability in delivery). Indeed, these criteria serve to focus the project on the "marketplace' as the medium for development cooperation and technology exchange. Having said this, however, there will be issues related to "green" issues and biodiversity that may find a congenial home within one of the three SOs proposed for US-AEP.

Finally, it was determined that the absence of a sustainability ethic in development planning was a fundamental problem throughout the region. If, in fact, one can get the policy right, it is

argued that the economic structure of most countries in the region will facilitate the rapid transmission of environmental signals to decision makers. Incentives work in Asia. Further, US-AEP engagement at this level will provide many of the "political benefits" earlier ascribed to the BCN Project (i.e., access to a wider range of development and environmental decision makers, the inclusion of green issues within the overall activity, etc.).

Following on this analysis, US-AEP activity will be more focused on sustainability issues in the region than global environmental issues. This is probably appropriate since another important objective for the project is to test its applicability as a development promotion tool in post-assistance environments (e.g., East Asia) for the ANE Bureau.

DECISION RULES

It is proposed to maintain flexibility in the US-AEP project by permitting the occasional funding of an activity (or transaction) outside the narrow confines of SOs 1 -3. The proposed decision rule is as follows: where an issue arises which is outside of the strategic focus but which lends itself to the US-AEP approach, or where an issue arises within the strategic focus but which calls for an implementation action different from the US-AEP approach, then the Secretariat may propose the activity for approval to the Assistant Administrator/ANE. Transactional opportunities falling within the framework may be approved by the Secretariat if the value of the transaction is less than $100,000.

ISSUES

The immediate issue relates to management responsibility for the BCN Project - a significant effort, originated by the ANE Bureau and included within the initial US-AEP project authorization. There are, at least, three options:

1. Treat BCN as a "target of opportunity" within the context of the US-AEP project. This suggests that BCN, while recognized as an "anomaly" in this strategic framework, nevertheless, would be included within the regular management structure and oversight of the Secretariat, and within the presentational and public affairs scope of US-AEP. In effect, the Secretariat would not seek to rationalize BCN within the strategic framework for US-AEP, but in all other ways would treat it as a part of ongoing activity.

2. Treat BCN as a ANE Bureau commitment to be continued through its projected implementation period. Under this option, BCN would not be included within the presentational or public affairs scope of US-AEP, although it might be managed by the Secretariat, or by another Bureau office. This would assure continuity of management.

3. Treat BCN as an anomaly within ANE, but falling within the mandate of the Global Bureau. In this case reassign management responsibility to the Global Bureau. Budgetary commitments and understandings would have to be agreed between the ANE and Global Bureau.
project.

Resource Requirements

Approximately $1.3 million in FY 1996 and $1.5 million in FY 1997 is requested for Targets of Opportunity. Apprcximately $1.5 million in FY 1996 and $6.5 million in FY 1997 is requested for the the Biodiversity Conservation Support project. At present, there are only two activities in this category: transfers to USAID missions, and the BCN project itself, As with other SOs, the Environmental 1 Exchange Program (EEP) is an important resource available for this objective and for assuring program outcomes.

Budget Cut Scenario

If budget cuts are made to US-AEP, they would be allocated initially to this area, although it is recognized that any reductions in funding available to BCN would be pari-pasu with other cuts to US-AEP at large. The point is that "targets of opportunity" would be reduced before SOs.

Implementation and Staffing

A general discussion of staffing is discussed under SO1 and is not repeated here. Currently, a fulltime officer on detail from the U.S. Department of Agriculture is assigned to various biodiversity activities as well as part-time support from two professionals with the TSSC. These positions will be maintained with or without the continuation of BCN under US-AEP.

Complementarity With Other Federal Government and Agency Partners

Up to this point, there has not been major collaboration with other federal agencies or even agency partners on the BCN activity. In other areas of biodiversity, however, there has been important collaboration and cost-sharing. There is a current agreement with the U.S. Fish and Wildlife Service and a pending agreement with the Smithsonian Institution. In both cases, there has been good cooperation and a real commitment to the US-AEP approach.

D. STRATEGIC OPTIONS

As part of this strategy exercise, the Secretariat explored alternative approaches with different people and offices within USAID and among implementing and collaborating organizations. The framework for that effort is included on the following two pages.

ANALYSIS

Four models were discerned. *First*, there is the existing concept, rooted in the interagency approach which described US-AEP at its outset. For all of the reasons rehearsed in the evaluation, there was early consensus that a more sharply drawn strategy, and one rooted more firmly in the development traditions of the agency, would be required (recognizing, however, the value in testing new approaches to development promotion, approaches targeted to advancing countries or sectors, and approaches taking advantage of the power of the global marketplace).

Second, a mission support approach was suggested. The idea here was to describe US-AEP as a "test" and to organize it in a way that could support those missions working in advancing countries and sectors where a "marketplace" or "partnership" approach might be appropriate as a transition to a development cooperation motif (e.g., Indonesia). The argument was made that the Global Bureau had not developed support mechanism tuned to these approaches and that US-AEP might usefully play this role. This option lost out to the more ambitious frameworks suggested by the technology transfer and constraints resolution options.

Third, there was considerable discussion and support for a technologies or "leadership ideas" approach. It was proposed that USAID identify key ideas, experiences, practices, or technologies from the United States and aggressively promote them in strategic situations in Asia. Illustratively, one might take "clean coal technologies," "demand side management strategies," "approaches to biodiversity conservation," etc. and promote them systematically in key country situations. The argument in favor of this approach was rooted in the ability to aggregate resources behind specific initiatives, suggesting significant opportunity for success and measurable impact. It was the judgment of the Secretariat, partially confirmed or supported by other people and offices within the Bureau and agency, that the approach mirrored too closely already successful Global Bureau strategies and did not open the door to a more expansive "clean revolution" strategy which might augment, supplement, substitute, and/or follow ANE development history and current programming strategies for the region.

Fourth, the Secretariat suggested a constraints approach directed to a careful understanding of the development dynamics in the region and taking advantage of circumstances in the marketplace and opportunities for international engagement that might support an

innovative new approach to development promotion. That strategy, of course, is the subject of this paper.

COUNTRY OPTIONS

The US-AEP operates within country boundary rules established between USAID presence and nonpresence countries. It is agreed that no more than 20 percent of authorized resources will be available for work in nonpresence counties. More stringent cost-share contributions are also required for nonpresence countries. To date, there have been few other established norms or allocations for specific countries, relying rather on demand against the US-AEP to define the allocations. The lone exception has been the allocations to USAID missions to facilitate complementary programming (continued herein under targets of opportunity).

The allocation issue may be forced, however, by any number of different factors (e.g., increased demand, diminishing budget, the addition of important new countries to the eligibility list, etc.). What then? Within existing country eligibility, the Secretariat would propose to rigorously apply the decision rules suggested under the different SOs:

> (i) all activity must reflect United States experience, practice, or technology; (ii) there must be a reasonable case that the experience, practice, or technology is likely to take hold or be sustainable in the Asia setting; (iii) transferring organizations must make a significant cost contribution; (iv) transferring organizations must demonstrate the intent of pursuing a long-term engagement or partnership with an Asian counterpart; and, (v) each activity or implementation event must demonstrate, on a comparative basis, greater potential for impact than other proposals (e.g., nearer-term vs. longer-term impact, sectoral vs. transactional impact, larger vs. smaller environmental impact, etc.).

There is enormous flexibility, of course, within US-AEP program tools. Small grants and exchange activities can be adjusted up or down, and between countries or sectors, easily. There is less flexibility with EEP and EIP, although they could probably be "stretched out" into FY 1998 and FY 1999.

In the situation where an important new country were included and assigned a specific allocation, there would obviously be an impact on the remaining portion of the program. *First*, a new country might suggest a new SO, either for the country, as such, or for an objective not currently included (e.g., energy in China). Note that the two principal tools available to the Secretariat are the EEP and EIP activities. There is no existing activity in place or proposed for the energy sector as such. Note also that the large commitment to BCN will be complete in FY 1997, although disbursements could probably be stretched out into FY 1998 and even

FY 1999. *Second*, and depending on the size of the country allocation, it could be necessary to eliminate an SO from the three proposed herein. Initially, the Secretariat would suggest holding SO1 and SO2, eliminate targets of opportunity, and drop SO3 (since some of the SO3 work could be managed with the intermediation tools available under SO2).

If the new country claim were in excess of, say, 30 percent of current levels, it would probably be necessary to reconsider the entire strategy for the US-AEP. Options would include: (i) redefining the US-AEP as a program tool for development requirements in nonpresence countries only, with priority to the new countries (e.g., China, Viet Nam, the Indo China region, Pakistan); or (ii) adopting a "key country" or "key region" strategy (e.g., China/India, Indo China/East Asia, etc.).

US-AEP Strategic Options

This matrix presents three strategic options (each using the US-AEP "way of doing business"). The purpose is to differentiate among different approaches to environmental issue: the consequences of each. No effort is made at this point to deal with "managing for results" and indicators (except in the most general of ways) although when we add that lev the matrix will change again. Hopefully the matrix will help guide discussion.

Strategy Options	Environmental Agenda	Countries of Operation	Management Issues	Customer Issues
Existing Concept i) ameliorate environmental pressures in the Asia region, ii) apply U.S. experience, practice, and technology, and iii) rely on new relationships with federal and state government agencies, nongovernmental organizations, and the private sector (albeit supported and channeled by USAID). All activities were intended to create new self-generating and self-sustaining linkages (i.e., professional and organizational partnerships) between actors in Asia and counterparts in the United States.	**Problems:** priority problem areas (both global and sustainability) are identified (e.g., biodiversity, urban infrastructure, industrial pollution, and end-use energy efficiency). **Determined By:** interagency agreement, followed by more open, demand-driven, programming. Some effort is being made, however, to encourage demand along a strategic path (e.g., demand, supply, and capacity constraints).	**Eligibility:** all 34 countries in Asia. **Criteria:** determined by professionals and organizations from Asia and the U.S., although demand is contoured by a variety of different criteria (e.g., 80% of assistance is directed to USAID presence countries; participation of industrializing countries require a higher cost-share contribution per activity, etc.).	**AEP Management:** foundation approach, orchestrating not directing. Secretariat. **Staff Orientation:** program **Other USG Agencies:** interagency coordinating group not currently engaged with governance. **Indicators:** intermediate (e.g., participation, policy, intermediation systems, mission support) and perhaps some environmental (e.g., biodiversity)	Doesn't fit neatly with USAID strategic planning process (i.e., ex-ante site-specific environmental objectives have not been identified.) Some US-AEP activities do not fit within current rationale (e.g., BCN, NGO/Business, etc.). Could be attractive as a reinventing government initiative - broad collaboration among USG agencies to achieve foreign policy objectives. AEP objectives are broader than USAID mandate.
1. Mission Support **Goal:** resolution of specific environmental problems in specific countries in Asia. **Purpose:** develop, test and promote market-based approaches and activities in support of USAID's global agenda and bilateral programs.	**Problems:** environmental problems would correspond with USAID bilateral objectives -- environmental emphasis would vary from one country to the next per USAID priorities but would include both global and sustainability problems. **Determined By:** USAID country missions in collaboration with ANE and Global, followed by targeted country strategies.	**Eligibility:** India, Bangladesh, Sri Lanka, Nepal, Philippines, Indonesia, and some activity in authorized regional countries (e.g., Mongolia, Indo China, etc.). **Criteria:** the USAID presence countries. The US-AEP as essentially a complement or support activity to mission programming.	**AEP Management:** traditional support approach (similar to the Global Bureau approach). **Staff Orientation:** technical/ program. **Other USG Agencies:** used as implementors but do not have a governance role. **Indicators:** environmental indicators are possible.	Could be attractive to the environmental community as the program would be supporting pre-defined environmental objectives. Inter-agency coordination and governance would be marginalized.

Strategy Options	Environmental Agenda	Countries of Operation	Management Issues	Customer Issues
2. Technology Transfer **Goal:** apply US experience, practices and technology to the resolution of environmental problems throughout Asia. **Purpose:** catalyze transfer of leap-frogging technologies (e.g., clean coal technologies). This approach could be broadened to include testing, or transferring, different development ideas or hypotheses (e.g., BCN).	**Problems:** global and sustainability issues, reflecting some kind of trade-off between Asian environmental problems and the most promising (i.e., leap-frogging) technologies from the U.S. (e.g. TQEM, clean coal technology, etc). **Determined By:** rigorous analysis, technology-by-technology, by interagency committee, followed by targeted technology strategies.	**Eligibility:** all 34 countries in Asia. **Criteria:** an analytic process would identify specific country problems and relevant U.S. technologies.	**AEP Management:** responsible for selecting and promoting specific U.S. technologies, or testing specific development hypotheses. **Staff Orientation:** technical **Other USG Agencies:** could be involved in both governance and implementation **Indicators:** technology adoption or environmental indicators.	It would be possible to tap into specific technical expertise of EPA and Dept. of Energy. A "picking winners" approach may be counter to the U.S. development experience/ philosophy. Some within the development community may have issues with USAID supporting operations in advanced developing countries.
3. Constraints Resolution **Goal:** promote a sustainable development regime among the advanced developing or rapidly industrializing countries in Asia. **Purpose:** resolve demand, supply and capacity constraints to environmental improvement in specific countries in Asia.	**Problems:** all sustainable development issues are considered but a focussed sub-set would be likely selected (e.g., pollution related to industrial production, electricity generation, agricultural production; possibly rural and urban management). **Determined By:** rigorous analysis, country-by-country, by USAID and related partners, followed by targeted country strategies.	**Eligibility:** Hong Kong, India, Indonesia, South Korea, Malaysia, the Philippines, Singapore, Sri Lanka, Taiwan, and Thailand (i.e., the tech rep countries). **Criteria:** rigorous analysis of demand, supply and capacity constraints; sunset provisions for each component (demand, supply or capacity) of each country strategy; consider eliminating 20/80 percent distinction; maybe 7 countries for demand, 10 countries for supply, and USAID presence countries for capacity.	**AEP Management:** traditional project approach (i.e., targeted strategies for each country, each problem area, each substantive component: demand, supply and capacity. **Staff Orientation:** technical **Other USG Agencies:** could be involved in program implementation but would not likely play a significant management/governance role. **Indicators:** intermediate (i.e., demand, supply, capacity) not environmental.	Some within the development community may have issues with USAID supporting operations in advanced developing countries. As a further option, could be advantageous as a first step towards developing a USAID regional strategy for East Asia (but that option would exclude India and Sri Lanka). Opportunities for inter-agency (USG) collaboration are present, but limited.

E. MANAGEMENT OBJECTIVES

Management Goals

Introduce and sustain a customer-focused system for the management of US-AEP.

Develop and Test a programming model (i.e., development cooperation for post-assistance situations.

Management Objective 1: *US-AEP cooperation with sources of public and private environmental resources and expertise in Asia and the U.S.*

Management Outcome 1.1: *improved information available to US-AEP concerning environmental experience, technology and practice in the U.S.*

Indicators:

- through interviews/survey, qualitatively assess the Secretariat's relations with organizations such as the following:
  - Department of Commerce
  - US Environmental Protection Agency
  - US Department of Energy
  - US Trade Representative
  - US Environmental Export Council
  - US-ASEAN Council for Business and Technology
  - the World Environment Center
  - World Resources Institute
  - Resources for the Future
  - US Council for International Business
  - US Chamber of Commerce (US)
  - American Chambers of Commerce Environmental Committees (Asia)
- number of environmental newsletters received from project collaborators;
- number of environmental technology or related meetings attended by US-AEP staff.

Management Outcome 1.2: *improved information available to US-AEP concerning environmental conditions and opportunities in Asia.*

Indicators:

- number of environmental newsletters received from project collaborators;

- number of meeting environmental technology or related meetings attended by US-AEP staff;

- number of country assessments completed.

Management Outcome 1.3: *formalized relationships with the most important sources of U.S. environmental experience, technology and practice.*

Indicator:

- MOUs signed, or other formal agreements, (e.g. interagency agreements).

Management Outcome 1.4: *formalized relationships with Asian professionals and organizations likely to influence the incentive and policy systems for environmental improvement:*

Indicators:

- MOUs signed, or other formal agreements.

Management Objective 2: ***Improved complementarity of programming with specified collaborators.***

Management Outcome 2.1: *formalized system of interaction with other USG agencies.*

Indicators:

- number of intergovernmental environmental committees on which US-AEP is represented;
- number of interagency committees directed to international environmental issues in which US-AEP participates;
- number of international environmental activities (agency or interagency) in which US-AEP participates in design or implement;

- participation of other agencies in design or implementation of US-AEP activities;
- reformulation of inter-agency consultative process.

Management Outcome 2.2: *collaborative system of interaction with other offices of USAID.*

Indicators:

USAID missions:

- number of mission-based project designs in which US-AEP participates;
- participation by USAID missions in US-AEP project designs.

USAID Global Bureau:

- number of global project designs in which US-AEP participates;
- participation by Global in US-AEP project designs.

Management Objective 3: ***to test if the US-AEP is a replicable model for USAID development programming.***

Management Outcome 3.1: *US-AEP management and strategy analyzed and lessons disseminated within USAID/Asia from a sustainability and cost-leveraging perspective:*

Sustainability:

- number of firms with environmental technology sales/ contracts/joint ventures/distributorship agreements following initial participation in US-AEP program.

Cost Leveraging:

- cost contribution of US-AEP technology transfer agents.

Model:

- USAID missions utilizing US-AEP model in environmental programming (transfer of US environmental technology, practices and experience to Asia, sustainability of activities, and cost sharing by implementors);

- performance measurement system operational.

US-AEP MANAGEMENT OBJECTIVES

Management Goals:

Introduce and sustain a customer-focused system for the management of US-AEP.	Implement and test a "development cooperation" programming model for USAID.

Management Objectives:

US-AEP cooperation with sources of public and private environmental resources and expertise in Asia and the US.	Improved complementarity of programming with specified ollaborators.	To test if the US-AEP is a replicable model for USAID development programming.

Management Outcomes:

Improved information available to US-AEP concerning environmental experience, technology & practice in the U.S.	Formalized system of interaction with other USG agencies.	USAEP management and strategy analyzed and lessons learned disseminated within USAID/Asia from a sustainability and cost-leveraging perspective.
Improved information available to US-AEP concerning environmental conditions and opportunities in Asia.	Collaborative system of interaction with other offices of USAID.	
Formalized relationships with the most important sources of U.S. environmental experience, technology and practice.		
Formalized relationships with Asian professionals and organizations likely to influence the incentive and policy systems for environmental improvement.		

Management Objective 1
cooperation with sources of public and private environmental resources and expertise in Asia and the United States

Introduction

Each of the objectives outlined above attempt to create new linkages. Central to that objective is the need to identify and disseminate information about United States environmental experience, best practice, technologies, and sources of investment capital. This kind of information has been a major focus of programs for upgrading environmental conditions in the United States. The Environmental Protection Agency, for example, maintains a number of technology databases, including the Environment and Energy Efficient Technology Transfer Clearinghouse and the Vendor Information System for Innovative Treatment Technologies.

Our assessment of information availabilities in the United States suggests that there is an impressive accumulation of technical information from central sources. What is less available is firm-specific or problem-specific information on specific commercial technologies.

Strategy

The management strategy, in addition to the program strategies for information dissemination discussed in section B above, is to strengthen the US-AEP Secretariat's own understanding of United States experience, best practice, technologies, and investment sources, as well as its own understanding concerning environmental conditions and opportunities in Asia. The basic approach is to strengthen its own institutional linkages with "partners."

> **Management Outcome 1.1**: cooperation with important sources of public and private environmental experience, practice, technology, and investment capital across the United States.

The idea here is to systematically cultivate and maintain a greater range of linkages with organizations like the United States departments of Commerce, Energy, etc; with groups like the Environmental export Council, World Environment Center, World Resources Institute, etc.

Key Assumptions

That the Secretariat can develop cooperative long-term relationships with organizations without the transfer of financial resources.

Management Outcome 1.2: improved information available concerning environmental conditions and opportunities in Asia.

The idea here is to systematically cultivate and maintain a greater range of linkages with organizations throughout Asia, like the asian Development Bank, Asian Institute of Technology, Thai Environmental Research Institute, etc. Equally, the Secretariat will also undertake to complete Country Assessments in each country of program activity.

Key Assumptions

That the Secretariat can develop a low-cost yet reliable template for the Country Assessments. Also that the Secretariat can develop cooperative long-term relationships with organizations without the transfer of financial resources.

Management Outcome 1.3: formalized relationships with the most important sources of environmental experience, practice, technology, and investment capital in the United States.

This outcome merely takes the relationship to a more formal status, perhaps reflecting an even more serious and sustainable long-term collaborative relationship.

Management Outcome 1.4: formalized relationships with Asian professionals and organizations likely to influence the incentive and policy systems for environmental improvement.

This outcome takes the Asian relationship to a more formal status, perhaps reflecting an even more serious and sustainable long-term collaborative relationship. To open the arena, it is proposed to focus on incentive and policy questions.

Management Objective 2
improved complementarity of programming with collaborators

Introduction

At the outset, US-AEP was proposed as much as an idea as a program (i.e., as a new way to approach development promotion in the fast growing countries of Asia). In this respect, then, it was hoped that US-AEP might develop and test new programming models for development cooperation, within the United States government community at large, and more specifically within the USAID community itself. To do that, it was understood that the Secretariat (indeed, the ANE Bureau) would have to introduce and sustain a customer-focused system of operation. Both aspirations have been a challenge. The Secretariat believes that by raising these aspirations to the level of formalized objectives (which have to be more carefully defined, measured, and reported on), it will

have a better chance of achieving its office and program objective of a Total Quality Management System.

Strategy

The proposal here is to seek opportunities for collaboration with other federal agencies and within USAID itself which are based on mutual advantage and respect rather than the more traditional USAID role as funding agency.

> **Management Outcome 2.1**: formalized system of interaction with other USG agencies.

This outcome is focused on collaborative programming rather than information exchange as with MO1. It suggests an aggressive "partnership and outreach" effort, again one which is premised on mutual advantage and respect rather than the transfer of USAID resources. The objective does not vitiate, however, collaborative arrangements under the three SOs which may include the transfer of USAID resources (on a cost share basis, of course).

Key Assumption

That Bureau management will also see this as an important outcome and that USAID missions and the Global Bureau will share the same objective.

> **Management Outcome 2.2**: collaborative system of interaction with other offices and field missions with USAID.

This outcome may be the most important on the management side. Increasingly, it will be important for USAID missions to draw in resources and relationships. It is assumed that the US-AEP Secretariat may have cultivated a range of relationships which may

bring with them resources. Yet the connection between Secretariat and mission (or Global Bureau center) is key.

Key Assumption

That Bureau management will also see this as an important outcome and that USAID missions and the Global Bureau will share the same objective.

Management Objective 3
the US-AEP as a replicable model for USAID development programming

Introduction

As noted in the Lessons Learned section of Part I, there is an important set of development issues yet to be resolved among the advanced developing and industrializing countries in Asia. These countries are not priority candidates for development assistance, however, because of their rapidly improving economic status. In this circumstance, many have argued the case for a distinctive strategy for these countries - something that might be articulated as a development cooperation strategy.

Consider the challenge. Asian countries have compressed the transformation of their economies into decades, something that took over a century for the industrialized countries. And where the industrialized countries devoted decades to develop the systems necessary to support environmental improvement, Asian countries must now do the same in just a few years. In this circumstance, the significant role for the United States may be to extend the reach of its own experience, best practice, and technology to Asia, creating a "virtual" capability for environmental improvement in the near-term, and defining the United States as the referent for environmental quality in the region over the longer-term. Indeed, this is the challenge to the US-AEP project.

Strategy

The Secretariat proposes to work directly with environmental professionals, institutions, and organizations in both Asia and the United States to resolve the constraints which currently impede the application of international environmental experience (and particularly that of the United States) to the resolution of priority environmental problems in Asia. This work will require the Bureau to engage the marketplace - a requirement which will inevitably challenge development orthodoxy, but which may be a blueprint for the period after development assistance (i.e., development cooperation).

> **Management Outcome 3.1**: self-sustaining and self-generating professional and organizational partnerships in evidence throughout Asia.

To help promote partnership, the Secretariat has identified the following approach:

private initiative: The project gives precedence to private initiative as the motive force for development promotion and the resolution of environmental problems (private initiative herein encompassing the worlds of ideas, opinions, and science as well as

business and commerce). In this context, the US-AEP project seeks to promote self-generating and self-sustaining linkages and partnerships (academic, commercial, professional, and technological) to connect information, technology, and capital with needs. The essential point is that USAID itself is neither client nor partner, rather catalyst. Clients and partners are those independent professionals, institutions, and organizations with important self-interests in environmental quality and improvement.

Private initiative, as reflected in the global marketplace, is an important new platform for development promotion (particularly among the dynamic new economies of Asia). Activities supported under the US-AEP project are designed to exploit the potential of the marketplace to i) catalyze private initiative to the resolution of environmental problems in Asia; ii) extend the reach of United States influence and responsibility; and iii) gain financial leverage in accomplishing ANE Bureau goals.

open systems: The US-AEP project is designed as an open system (i.e, able to respond to demand as it manifests itself in the global marketplace). Why? The conditions affecting the adoption of sustainable approaches to economic development and any reduction in the constraints to environmental technology transfer, cooperation, and development cannot be predicted in advance for each country; and the resources available from USAID (indeed, from any international development agency or combination of agencies) are not sufficient to underwrite a successful external strategy.

Rather, the strategy must be to strengthen the incentives for environmental improvement in each country and in the region, and to catalyze the broadest number of individuals and organizations to environmental advocacy and action. This kind of strategy can seek to structure demand for USAID engagement and support, but it can neither predict it nor design the patterns of action-and-reaction which may result from USAID activity.

interagency and intergovernmental: In addition to its status as a USAID-funded project, US-AEP is also an umbrella for interagency and intergovernmental cooperation. In practice, the Secretariat looks to other government resources to meet a demand before organizing a free-standing activity. Where necessary, USAID funds may be available to work collaboratively with other government agencies and departments, to provoke those agencies and departments to engage in Asia, or to build institutional capability. In all cases, important cost-sharing and leverage targets are associated with any transfer of USAID resources.

The ANE Bureau is prepared to work with other federal agencies and other governmental entities in situations where objectives are complementary, even if not identical. Illustratively, where USAID most often sees trade and aid as antithetical, ANE believes the two objectives can be paired as to be synergistic, one with the other.

client orientation: US-AEP activities are intended to facilitate self-generating and self-sustaining transnational initiative; and, for the most part, activities are directed to classes of clients not specific institutions and organizations. Asian institutions and organizations must be the client or target for partnership, not USAID itself; and, each separate activity or transaction must meet important cost-share commitments and assure required leverage by participating institutions and organizations.

other management factors:

- As a general proposition, specific actions under authorized activities will be initiated by Asian institutions and organizations (e.g., requests for fellowships, exchanges, training, etc.). In some instances, institutions and organizations in the United States will also be authorized to initiate action (e.g., the NASDA Technology Fund). But in all instances, the premise is that actions will be initiated by potential transnational partners not the US-AEP Secretariat itself.

- On the Asian side, the Secretariat will nevertheless, seek to stimulate and structure demand to engage in Partnership activities; to acquaint Asian institutions and organizations with United States environmental experience, practice, and technologies (with a view to encouraging their participation in the new global marketplace for environmental improvement); and to assure that demand is bounded by the strategic objectives identified above, reflect appropriate levels of cost-share, leverage, etc.

- On the United States side, the Secretariat will similarly seek to stimulate United States institutions and organizations to participate in partnership activities; to acquaint American institutions and organizations with Asian circumstances and requirements with a view to broader participation in the new global marketplace for environmental improvement); and to assure that demand is also bounded by the strategic objectives identified above, reflect appropriate levels of cost-share, leverage, etc.

- In all cases, before committing to a new activity or a new management mechanism, the US-AEP Secretariat will identify other USAID or USG activities, projects, contracts, agreements, or grants to determine whether a new activity or management mechanism is necessary. Indeed, the Secretariat will also review its own portfolio and make a similar determination before proceeding with new activities or management mechanisms.

- In terms of staffing, the Secretariat has organized its field presence around priority environmental problems and directed its work to structuring demand. Integrated teaming will be organized around strategic objectives (e.g, EIP, Asian Energy Initiative, Indonesian Infrastructure Activity, India Coal Washing Activity, etc.). The Secretariat's Washington presence is

organized around the strategic objectives described earlier and directs its work to structuring supply.

Key Assumptions

That there are important and relevant experiences, practices, and technologies in the United States which could have immediate impact on environmental quality in Asia, and that the most effective near-term way to transfer American environmental experience, practice, and technology is by creating new linkages between Asia and the United States (governmental, nongovernmental, and business) to connect information, technology, and capital with needs.

> **Management Outcome 3.2**: USAID missions utilizing US-AEP models in environmental programming in Asia.

The US-AEP is miscast if seen only in its project context. To the extent it is also a model for USAID programming in post-assistance development situations, it is also an attitude towards programming and set of new ideas available to and applicable to mission programming, particularly in issue areas related to the marketplace. The Indonesia strategy, for example, makes the very same point.

One part of the problem is intellectual (i.e., devising and testing new approaches), the other political (i.e, promoting new approaches to application). It will be incumbent on the Secretariat to articulate lessons learned and disseminate information about successful models, as well as developing a more collegial style in its interaction with target missions (e.g., India, Indonesia, and Philippines). And from the field mission side, a similar set of injunctions are appropriate. In this regard, the several management objectives and outcomes come together around this MO 3.2.

Key Assumptions

That the USAID management will commit to this MO assume leadership in promoting experimentation, new approaches, and collaborative work between the US-AEP and mission programs.

PART III

ACTION PLAN FOR 1995 - 2000

PART III: ACTION PLAN FOR 1995 -2000

A. ACTION PLAN NARRATIVE

The US-AEP's program goal is to have ***sustainable development concepts governing economic growth throughout the Asia region***. To attain this goal, ANE will pursue three strategic objectives (and three related management objectives): 1) sustainable development adopted as a national goal in countries throughout Asia; 2) increasingly efficient and less polluting industrial regimes in Asia; and (3) increased environmental systems and services available to poor households in urban areas in Asia. These three strategic objectives (SOs) underpin US-AEP's program goal in the Asia region and will be of long-term strategic benefit to United States interests in the region.

The FY 1995-1997 Action Plan calls for the further development and test of new approaches to development promotion, predicated on development cooperation and a growing set of self-generating and self-sustaining professional and organizational partnerships operating in the international environmental marketplace for ideas, practice, technology, and investment capital. The Plan coincides neatly with the transition strategies proposed by several USAID missions in the region (e.g., Indonesia).

SO1: Sustainable Development Adopted as a National Goal by Countries Throughout Asia

Rationale

Unless and until sustainability concepts are incorporated among the development goals of countries in the Asian region, the prospects for improvements in environmental quality will remain limited. Once embedded in public consciousness and policy, however, the economic structure of most countries in the region will facilitate the rapid transmission of environmental signals to decision makers. Incentives work in Asia.

Tactics

To achieve SO1, there are three tactical imperatives which need to guide its implementation over the next three years. *First*, the Secretariat needs to establish, reenforce, or identify those important personal and institutional relationships in each country key to securing the place of sustainability as a national goal. With the field mission in place, and with the management commitment to collaborative programming with USAID field missions, the chances

for meeting this imperative are greater than in the first three year period. Note the criticality of these relationships, and the posture of US-AEP in this regard, to the other objectives. *Second*, and, taking account particularly of the limitations on budget, the Secretariat must build self-generating and self-sustaining relationships in the areas of development policy, environmental management policy, participation, and public education. *Third*, the Secretariat must design and initiate new results packages which address the outcomes proposed for SO1.

Program Outcome 1.1: *widespread commitment to and adoption of sustainable development approaches, plans, and policies.*

Under this PO, and in cooperation with other federal agencies, USAID missions, regional organizations, and both U.S. and Asian NGOs, the US-AEP will seek to promote new approaches to development planning and policy, including the explicit recognition of sustainable development as a national goal throughout Asia. In effect, the US-AEP Secretariat will seek to position other institutions and organizations in pursuit of this PO (principally via EEP). US-AEP operations at this level, and in this broadly collaborative fashion, will be important in their own right (in terms of the stated objective) but also as a device to position and characterize the US-AEP in each country as something more important than the more technical aspirations reflected in SO2 and SO3. Work in this area is also intended to maintain a development profile on environmental issues and to extend the reach of US-AEP activity across blue, brown, and green issues.

In addition, the US-AEP Secretariat will work with Asian governments and both U.S. and Asian NGOs to promote the disclosure of environmental information and to improve the quality and coverage of data collection and analysis. This work is important to buttress improvements in public policy but also to measure performance of US-AEP activity.

Program Outcome 1.2: *widespread commitment to and adoption of environmental management policies.*

The transition to environmentally superior production methods in Asia (i.e., the "clean revolution") hinges, in large measure, on the development of incentives and institutions capable of fostering such production methods. Command-and-control approaches are already part of most countries' environmental game plan. What will be increasingly important, however, particularly in the ten to twenty year window opened by Asia's growth surge, are economic and market-based incentives. There are three propositions buttressing this direction. First, command-and-control isn't working and probably won't take hold in the near-term. Second, it is critically important to affect the quality of industrial investment over the next twenty years since fully 85% of the industrial stock in Asia for in year 2015 will be new as from today. Third, market-

based approaches are technical assistance dependent. Rather, with a modest boost, many incentives can be promoted in the market place to important effect (e.g., the promotion of ISO 14000 through market-based training initiative). The Secretariat believes it can take important strides here through the existing EIP and EEP activities.

Program Outcome 1.3: *increased participation of individuals, communities, NGOs, and businesses in environmental activity.*

This is an important new area for US-AEP. During the last year, the Secretariat authorized a new activity entitled NGO/Business Partnership intended to promote both participation and collaboration. Using the EEP, the Secretariat will initially test opportunities to involve women in identifying solutions to environmental problems and contributing to public decision-making; provide exchange training opportunities for environmental advocacy; promote alternative dispute resolution techniques; and continue to promote joint projects between apparently contending groups (e.g., the nongovernmental and private sectors). Wile a difficult area, there is a range of very important experience from the United states, without which environmental progress in the United States would have lagged. No new categorical activities are contemplated for the three year period.

Program Outcome 1.4: *increased awareness of sustainability and environmental issues.*

This is also an important new area for US-AEP. During the last year, the Secretariat authorized a new activity in support of the internationalization of the American Air and Waste Management Association and the Water and Environment Federation. While these programs could be rationalized under a range of different objectives and outcomes, the ostensible purpose of the support was to globalize the continuing environmental education activity of the two professional associations. Using EEP, the Secretariat will also explore the possibilities for expanding media coverage of the environment throughout Asia (an opportunity explicitly included in IIE's successful tender for the new contract); the transfer of ideas, experience, approaches, and materials for promoting environmental awareness; and the transfer of environmental approaches for educational curricula. No new categorical activities are contemplated for the three year period.

Performance

This is essentially a new area for US-AEP and transactional reporting is probably not appropriate. There are some signs that this could be a promising area for US-AEP, however. During the last year, the US-AEP has approached a range of different organizations to explore their interest in supporting activity in Asia directed to policy reform, participation, and public

awareness. Interestingly, several DOE national laboratories, private research organizations (e.g., the Electric Power Research Institute), environmental regulatory agencies (e.g., California Environmental Protection Agency) and environmental think tanks (e.g., World Resources Institute) have indicated their willingness to collaborate on the basis of their contribution of personnel costs and the waiver of overhead charges, with US-AEP contributing local support. This suggests not only opportunities for financial leverage but also the prospect of long-term institutional environmental partnerships on a much larger scale than earlier envisaged. Indeed, it suggests possibilities for reassessing the Secretariat's approach to leverage and partnership.

Constraints and Obstacles

It is proposed to hold SO1 open to all eligible countries in Asia. Of course, this might be considered an obstacle (or a retreat from focus). Yet, the Secretariat believes it is important to retain some semblance of the regional breadth and substantive ambition of the Partnership, even as it tries to "focus and concentrate". Why?

SO1 positions the Partnership on the high ground and in a context closer to the center of USAID values (i.e., sustainable development). In this sense, the Secretariat is suggesting an alternative public characterization for the initiative (i.e., from trade to development), using the policy/participation/awareness objectives as a platform from which to promote its other more technical strategic objectives. SO1 is also the only place within the program flexible enough to respond to requests for support in blue and green areas - yet those exceptional cases will be cast in a strategic framework reenforcing the conditions necessary for any success on the environmental front in both the industrial or infrastructure sectors. The technology representatives have also argued consistently that this kind of perception and opening is critical to maintaining a development posture in the nonpresence countries.

Key Assumptions

More than the other SOs, the outcomes under SO1 are fundamentally dependent on the active engagement of collaborating professionals, institutions, and organizations. The key assumption, then, is that there is sufficient interest and motivation among United States government agencies, universities, state organizations, nongovernmental organizations, business associations, etc. to carry burden of the objective in self-generating and self-sustaining partnerships with counterparts throughout Asia.

Expected Impact

The Secretariat believes that it can contribute, in a collaborative context, to achieving this SO. Details of the expected results are

suggested in Annex A. They will be finalized and documented based on forthcoming country assessments.

Note the strategic level indicator (i.e., the number of countries making an explicit commitment to sustainable development goals). There is enormous pressure in support of this outcome from the international community, and it is growing within almost every country in the region. Applying USAID's strategic approach to "policy dialog", and the modest resources available to support efforts by other institutions and organizations, the Secretariat believes it could achieve this goal within the time frame of the strategy proposal (i.e., by the FY 2000) and reinsert itself as a major development force in the region as it was established at the time of the Green Revolution. The challenge will be to apply our acumen as well as we once applied our resources. The strength of the effort will be found in the quality of transnational partnership.

The Secretariat has also chosen to focus on market-based instruments in its effort to strengthen environmental management policies. This emphasis has advantages over command-and-control which requires appropriately trained staff and equipment for measuring and monitoring, uniform enforcement, very high information costs, high fixed cost outlays on the part of industrial firms, and which provide little incentive for innovation. The Secretariat believes that market-based incentives enlarge the opportunity for impact.

The other two outcomes (i.e., participation and public education) are admittedly more ambitious and more difficult. As the Secretariat approaches the design of new performance packages for this SO, based on country assessments, it will seek to identify "key interventions" (e.g., NGO-Business partnership, university curriculum development, etc.) and will present a broader strategic plan as part of its activity designs.

Resources Needed

Approximately $1.5 million per year (ENVT) through FY 2000 will be required to achieve these program outcomes. This is a very modest request, relying heavily on the ability of the Secretariat to catalyze self-generating and self-sustaining development momentum. Several ongoing activities are included within this request (in total or part): NGO/Business Exchange, ASEAN Environmental Improvement Project, and support to the Air and Waste management Association and Water & Environment Federation. The new contract for the Environmental Exchange Program (EEP) with the International

Institute of Education (IIE) will also be used. Technical Support costs are included in the requirements estimate.

SO2: Increasingly Efficient and Less Polluting Industrial Regimes in Asia

Rationale

The industrial stock in East Asia is doubling every five years, and by 2010 as much as 85 percent of that stock will be new as measured from today. This remarkable phenomenon, taken together with the very real potential for "partnership" approaches to development promotion in the region, underscore both the importance and opportunity to launch a "clean revolution" in the industrial sector in East Asia. It also suggests the rationale for configuring a continuing development relationship with the advanced developing and industrializing countries in the Asia region.

Rapid industrial growth among the advancing countries in the region is already having a negative impact on the developing countries (e.g., technology hand-off in low-wage grey-goods sectors like textiles). This dangerous situation underscores the case for work in the industrial sector even among the less advanced countries in the region (perhaps with a greater emphasis on waste minimization and pollution prevention). Note that the pressure on agro-industrial systems will be equally present in both the advancing and developing countries.

Tactics

To achieve SO2, there are three tactical imperatives which need to guide its implementation over the next three years. *First*, the Secretariat will seek to identify those market-based incentives which might affect industrial behavior vis a vis the environment in the near-term. An example would be the potential in promoting ISO 14000 as an environmental standard. ISO has the advantage of careful definition, international support, and implementation opportunity in the commercial marketplace (i.e., via fee-based training). It also has an easy performance measurement feature in certification. The Secretariat, together with its implementation contractor, Louis Berger, International, will specify an approach to promoting market-based incentives as the centerpiece of each country strategy.

Second, the Secretariat will work with industry associations, in priority sectors, and with firms shown to be responsive to environmental incentives, to build capacity for environmental management. Every effort will be made to identify and support long-term transnational partnership opportunities (e.g., with the Chemical Manufacturer's Association vis a vis "responsible care"). Note that incentives are also used in this work as a screen or criterion for engagement (i.e., the Secretariat will work in ares where there is a demonstrable likelihood of success). *Third*, the Secretariat will continue its successful work under the former technology Cooperation component. The important differences into

the future include the addition of country assessments (suggesting that market imperfections will and related US-AEP input will be differentiated by country) and the expectation that the U.S. Department of Commerce will assume a greater financial burden for technology representation.

Program Outcome 2.1: *strengthened and expanded incentives for environmental quality.*

There are three different elements to this outcome. First, there will be an effort to promote compliance in with environmental regulations in the industrial sector by promoting technical cooperation between federal and state environmental protection agencies in the United States with counterparts in Asia; and support for government and private groups promoting consensus standards for different economic sectors (e.g., electric motors, etc.). Second, the Secretariat will work with Asian industry associations and businesses to have them create incentives for environmental performance by their members, suppliers, customers, and neighbors through "codes of environmental conduct", charters of environmental commitment", etc.). And, third, a major effort will be made to extend international incentives for environmental improvement to Asian markets (e.g., ISO 14000, multinational supplier chain initiatives, etc.).

Program Outcome 2.2: *increased use of environmental considerations in environmental decision-making.*

PO2.2 is directed to management behavior at the firm level. As suggested above, the Secretariat will work closely with ISO 14000 principles as well as those of other industry groups (e.g., "responsible care" for the chemical industry) to promote total quality environmental management. In this regard, the secretariat will explore ways to offer technical assistance and training at the association level) to businesses seeking to upgrade management systems through commercial training, self-help initiative, customer and supplier-chain networks, etc. Desired behaviors are specified earlier in this paper.

Program Outcome 2.3: *significant reduction in market imperfections to facilitate an increase in environmental transfer from the United States to Asia.*

Work under this outcome is largely defined by the current technology Cooperation component. As indicated, a greater effort will be made to differentiate situations among countries and to seek greater cost-sharing and sustainability in all activities. On the content side, a major effort will be made to introduce "real time" information and consultation to industrial firms in participating countries on how to employ environmental technology so as to reduce pollution while making a profit. From the United States perspective what is clearly needed is firm-specific

information about environmental hazards and environmental management. The common thread in the approach to information is acquiring practical information suited to individual users' needs.

As noted earlier, intermediation work in support of this outcome is divided into three parts: information, finance, and institutional connections, linkages, or partnership. The recent evaluation by MSI carefully reviewed these programs, and recommendations are being incorporated in implementation plans.

Program Outcome 2.4: *a significant reduction in market imperfections to facilitate an increase in environmental infrastructure investment for industrial waste from the United States in Asia.*

This is included as a separate outcome to differentiate it from the firm-level focus of PO2.3. Yet, the orientation is intermediation, and there will be some mutual support between PO2.3 and PO2.4. In the infrastructure area, however, a greater emphasis will be placed on project intermediation or development (i.e., identifying and promoting specific industrial infrastructure projects). Experience suggests to the Secretariat that its tools may be ideally suited to working with developers as they seek to eliminate bottlenecks standing in the way of infrastructure development. In this sense, then, intermediation work will most likely relate to information and finance.

Performance

While there has been significant activity in the area of intermediation (i.e., eliminating the market imperfections impeding environmental technology transfer), there has been less work related to incentives or firm-level behavior. On the other hand, the Secretariat has devoted significant effort to building its understanding of the two areas, on the basis of which the preceding strategy has been proposed. Indeed, the Secretariat believes that it has a very keen understanding of the situation (i.e., an emphasis on the productive process, clean technologies, and environmental management; and on those factors which can influence business behavior and those aspects of business behavior one would wish to change in favor of environmental quality). Pairing that insight with a new and enhanced field staff (e.g., integrating the EIP staff into Secretariat operations), country assessments and strategies, and collaborative programs with industry associations, there is significant promise of success in this area.

Constraints and Obstacles

It is proposed to focus SO2 on ten countries in Asia. While many of these countries are nonpresence (i.e., Hong Kong, Malaysia, Singapore, South Korea, and Taiwan), the increasing cost share by the U.S. Department of Commerce and the very high leverage

suggested by the application of market-based incentives suggests that the proposed strategy is reasonable.

It is important to underscore the enormous opportunity suggested by the predictions of continuing rapid economic growth in the region. If, in fact, as much as 85 percent of the industrial stock will be new as from today in the year 2010, then a strategy directed to new investment could have very high payoff. Indeed, the challenge is to meet the environmental challenge at the point of investment rather than later with environmental technologies. This modest, but important, insight sets US-AEP apart from many of its collaborating institutions which have been focusing on pollution control and the sale of environmental technologies almost to the exclusion of clean manufacturing and process technologies. And it is just this kind of insight which a development agency can bring to its interagency partners if it is, in fact, engaged with them in common cause. Had USAID backed away from the Trade promotion Coordinating Committee and its related sub-committees, it would have lost its leverage on the environmental work of the departments of Commerce and Energy.

As noted earlier, the environmental challenge will be won or lost in the marketplace. The US-AEP strategy attempts to create new linkages in that marketplace to connect actors from the United states with counterparts throughout the Asia region. Most call for cooperation among governmental, business and nongovernmental institutions. Many rely on cooperation inside of networks or associations. They do not require massive new transfers of aid or large-scale institutions, relying heavily instead on new relationships within the private sector, supported and channeled by public activity.

Key Assumptions

That there are important and relevant experiences, practices, and technologies in the United States which could have immediate impact on environmental quality in Asia, and that the most effective near-term way to transfer American environmental experience, practice, and technology is by creating new linkages between Asia and the United States (governmental, nongovernmental, and business) to connect information, technology, and capital with needs.

Expected Impact

This SO is the principal focus of the proposed strategy. The strategic level indicators are ambitious, but they are the key issues facing Asian development policy. The Secretariat proposes to work with an appropriate organizations (e.g., World Resources Institute) to further refine the indicators, but then to use them as part of its policy and incentives strategy. Adequate and accurate information about environmental hazards must underpin all environmental strategies, public and private. Without it,

regulatory agencies have no scientific basis for standard-setting and enforcement, businesses cannot gauge the extent and nature of pollution, and the public is ignorant of the risks it faces. Public disclosure of information on the types, amounts, and consequences of pollution has significantly enhanced the demand for improved environmental controls where it has been tried; it needs to be employed much more widely by both businesses and governments throughout Asia. It is also important to note the connection between information gathering and disclosure and awareness and participation. In this regard, the Secretariat believes there is a very neat fit between SO1 and SO2.

The Secretariat has also put policy and incentives at the very center of its strategy. As noted throughout this paper, the economic structure of most countries in the region will facilitate the rapid transmission of environmental signals to decision makers. Incentives work in Asia and establish the feasibility for the proposed strategy. Further, the Secretariat will use incentives as a screen in assessing the feasibility of interventions for capacity building at the firm level. This secondary use of incentives (i.e, as a screen) again underscores the neat fit between the proposed outcomes for SO2 (i.e., incentives, capacity, and technology transfer). Since there are a set of existing incentives already at work in the marketplace, the Secretariat believes there is a good starting point for program activity. And the inclusion of the former ASEAN EIP within US-AEP suggests a strong management base for both the incentive and capacity building outcomes.

The technology transfer or intermediation outcome is based on the exiting technology cooperation component. As noted earlier, the Secretariat distinguishes among information, financial, and linkage outcomes, and it is agreed that actual activity will be based on a country-by-country analysis. All activities will not necessarily be carried out in all countries. Further, it is agreed that work under this outcome is directed to resolving market imperfections, suggesting time-limited engagement and the development of market-based systems and services to resolve the imperfections. We already see that much of the technology representation function will be taken over by the Foreign Commercial Service. Our recent evaluation also suggested that significant progress and impact (both economic and environmental) was beginning to be reflected in performance measurement information systems.

Resources Needed

Approximately $8 million per year (ENVT) through FY 2000 will be required to achieve these program outcomes. This is the central core of the request for the US-AEP program. As noted above, there are four program outcomes proposed. At present, the activities funded under the existing Technology Cooperation component predominate (i.e., Technology Representation in cooperation with the U.S. Department of Commerce, Technology Fund with the National

Association of State Development Agencies, Environmental Technology network for asia with USAID's CTIS, Environmental Action with the Environmental Protection Agency, and States Initiative with the Council of State Governments).

In the financial intermediation area, there are agreements with the Banker's Association for Foreign Trade which supports trade finance, an agreement with the Overseas Private Investment Corporation which supports enterprise finance, and the Infrastructure Finance Advisory Service (IFAS) which supports environmental infrastructure finance.

SO3: Increased Environmental Systems and Services Available to Poor Households in Urban Areas in Asia.

Rationale

As a consequence of adopting rapid growth models, most urban areas in the Asia region are falling behind in the provision of environmental infrastructure (i.e., clean water, waste water, solid and hazardous waste disposal, etc.). This is because industrial growth is outstripping the institutional and financial structures of governments, particularly among the developing countries in the region.

Tactics

While an important issue, and one requiring enormous investment, the proposed approach is quite focused. *First*, it is addressed to the opportunity suggested by privatization. Where several USAID missions are also working on this issue, in cooperation with the Global Bureau and RHUDOs, the Secretariat has approached the incentives question through problem-solving on specific projects. This strategy is very different from the approach taken early on via the Infrastructure Finance Advisory Service (IFAS) which turned-out, on the basis of internal evaluation, to be too institutionally-focused and too far removed from where the action is (i.e., in Asia). Discussions on the future of IFAS are ongoing with the contractor K&M Engineering.

Second, emphasis will continue to be put on intermediation. Again there is a distinction from the earlier approach. Technology representation in Asia has demonstrated that it can absorb much of the information requirements. In addition, infrastructure representation for developers in Indonesia and Philippines has proven more effective than representation from Washington. And still further, the engagement of the Water & Environment Federation to promote continuing environmental education in areas related to environmental systems and services suggests further possibilities for long-term linkages (e.g., American Consulting Engineers Council).

Program Outcome 3.1: *strengthened and expanded incentives for private and community investment in environmental systems and services in urban areas.*

This PO is directed to the financial issues surrounding the provision of environmental systems and services and, in this sense, is limited. As noted earlier, work in this area will arise from specific project opportunities and supplement other efforts supported by USAID missions, the Global Bureau, and related RHUDOs. It is also proposed to look at the financial support issues related to more decentralized systems (e.g., community water systems, home storage, etc.) which may have a nearer term impact on poor households. For the moment, it is assumed that engagement at this level will find resonance in the US-AEP approach.

Program Outcome 3.2: *reduced market imperfections to increase technology transfer between the United States and Asia to increase U.S. investment in potable water systems and services in Asia.* First, it is proposed to add infrastructure projects to the agenda of the technology representatives for purposes of information exchange. Second, and as noted above, the US-AEP will continue to support the establishment of the Water & Environment Federation and related professional organizations for purposes of firming up "missing connections" and approaches to professional education. And, third, it is proposed to continue infrastructure representation in Indonesia and Thailand and to explore opportunities in India, Philippines, and Sri Lanka (possibly also Bangladesh and nepal). This intermediation function seems to fit well with the more focused technical assistance efforts supported by the USAID missions, Global Bureau, and RHUDOs.

Program Outcome 3.3: *reduced market imperfections to increase technology transfer between the United States and Asia and to increase U.S. investment in sewerage and solid waste disposal systems and services in Asia.*

See PO 2.4 and 3.2 above.

Performance

The US-AEP project has been engaged with the full range of environmental infrastructure activity, not broken-out as herein by industrial, potable water, or other sanitation requirements. The results have been mixed. At the outset, it was decided to organize an Infrastructure Finance Advisory Service (IFAS) here in Washington. With time, it is clear that the need for this service is probably less than the benefit/cost returns. Rather, it has been determined to include infrastructure within the orbit of the technology representatives, to put infrastructure representation in place in situations where they can be supported with other technical assistance resources and development tools, and to focus

more carefully on the financial systems which can support infrastructure investment.

Constraints and Obstacles

There are an interesting set of constraints and obstacles. First, the project cycle is long and complicated. Typical gestation time for an infrastructure project is 10-15 years. In that circumstance, it is probably appropriate to distinguish between work on the incentive and intermediation sides. Yet even there, the Secretariat has determined to take on the financial issues in the context of specific projects (in an effort to capture the impact period to something relevant to USAID's requirements). second, and taking account of the U.S. equation, the Secretariat is still wrestling with the U.S. input (i.e., development, design, operations, equipment sales and technology transfer, investment, etc.). The US-AEP could address any one of these inputs, and it is unlikely that any single project will contain all elements from the United States. Ought we to prefer one over the other? Is it possible to support a project where there is U.S. investment, but European design, and Japanese technology? And, third, we are finding that the U.S. industry is as yet insufficiently organized for private projects. Indeed, we have that very issue under careful study with the American Consulting Engineers Council.

Key Assumptions

That governments throughout Asia will be increasing open to alternative financial approaches to the provision of environmental systems and services to poor households in urban areas. As noted, Global, RHUDO, and USAID missions are making important policy inputs in this area, and US-AEP will seek to supplement that work in the context of specific projects. The second assumption relates to the structure of the U.S. water industry and whether it is sufficiently organized to respond to "investment" opportunity in Asia.

Expected Impact

The impacts here can be measured in policy terms (e.g., governments moving towards the privatization of environmental infrastructure systems and services) and projects (i.e., specific projects launched), and the projects themselves, of course, will have environmental consequence. In assessing impact, there is an interesting performance measurement issue for US-AEP. If country X moves towards privatization and important projects are awarded to European and Japanese consortia, should we consider that a success? This, of course, is where the trade/aid issue is often joined. Our answer would be, yes, a success on the policy side, but *not* on the technology transfer side.

Resources Needed

Approximately $1.5 million per year (ENVT) through FY 2000 will be required to achieve these program outcomes. At present, there are three principal activities in support of these outcomes: technical support for intermediation in Indonesia and Thailand, the Infrastructure Finance Advisory Service (IFAS), and support for the water & Environment Federation. As with other SOs, the Environmental Exchange Program (EEP) is an important resource available for this objective and for assuring program outcomes.

B. PERFORMANCE MEASUREMENT

Following the discussion of the proposed strategy, the secretariat will give priority to developing a program-wide monitoring, evaluation, and reporting system. Since the proposal suggests a substantially revised programming approach, significant work will be required to design and operationalize a performance measurement system. Of course, a good bit of the information related to implementation progress and program impact being collected by the Secretariat will be useful.

The priority activities to be undertaken to complete a performance monitoring system for US-AEP are as follows:

1. Review approved programming strategies for USAID field missions in Asia by July 30, 1995, to identify areas where the US-AEP can complement ongoing bilateral efforts. Country strategies for USAID missions and offices in Asia will be reviewed to extract and synthesize information on programming strategies related to sustainable development concepts and the environment. This information will be compiled into a format useful for identifying the intersection of interest between field mission and US-AEP activities. This information will enable the Secretariat to highlight program areas to be considered as it carries out country assessments (e.g., policy and incentive environment, participating country perceptions and priorities, and opportunities for complementary programming with both field missions and the Global Bureau). In addition to informing activity design, the Secretariat will also review USAID environmental performance reporting to identify information areas of common interest.

2. Conduct two prototype country assessments by September 30, 1995, one for a presence and one for a nonpresence country. Country assessments will explicitly indicate which strategic objectives and outcomes will be pursued in a given country, articulate country implementation and management plans, and identify performance indicators. Assessments will begin with a scan of the current state and prospects for sustainable development, environmental management, and provision for environmental infrastructure. Field mission assessments may (indeed, hopefully,

and in most cases, will) substitute for separate assessments by the Secretariat. Based on these assessments, the US-AEP field mission will seek to structure or encourage demand to access US-AEP activities and tools, the Secretariat will seek to tailor and improve supply support from U.S. experience, practice, and technology, and collaborative programming opportunities will be identified with USAID field missions, the Global Bureau, other government agencies and departments, etc.

3. Review the current status of data collection for US-AEP program activity by August 30, 1995, and clarify data collection requirements for implementing organizations (and/or new sources for performance measurement). An inventory will be completed to document implementation and performance information that is currently collected, a majority of which is generated by implementing organizations. This information will be reviewed against the proposed strategy and program outcomes to determine what information gaps currently exist, what unnecessary information is being collected, and how current reporting by program implementors needs to be adjusted (and/or new arrangements made for performance measurement). Based on the analysis, information and measurements systems will be adjusted, refined, or developed. With new contractors for technical support and the exchange program, and with the engagement of both MSI and Winrock, the secretariat believes there are adequate resources to address the information requirements.

4. Conduct a review of environmental, environmental technology, and related data systems by October 30, 1995. A survey will be conducted in collaboration with CTIS on the sources and types of environmental information available in the United States and relevant to Asia, and with Winrock or World Resources Institute on the status of environmental information and disclosure relevant to proposed outcomes available in Asia. As noted earlier, the effort here extends beyond performance measurement to buttress the core objectives captured in SOs1-3.

5. Develop and submit a performance management plan for the US-AEP by December 31, 1995. Based on the work in items 1-4 above, the secretariat will develop and submit a measurement performance plan for review and approval. Once approved, it will constitute the basis for semi-annual performance reviews.

ACTION PLAN TABLES AND FIGURES

TABLE
Resource Allocations for USAEP including ASEAN EIP
(US$ millions)

	FY95	FY96	FY97−20%	FY97	FY97+10%
SO 1: Sustainable Development	5.0	2.8	2.2	2.4	2.6
SO 2: Industrial Efficiency *1	10.7	12.5	8.4	9.0	10.0
SO 3: Household Water/waste	2.0	3.1	1.6	1.8	2.0
Targets Opportunity *2	0.9	1.3	0.5	1.5	1.7
Biodiversity Conservation	4.0	1.5	4.0	6.5	6.6
TOTAL	22.6	21.2	16.7	21.2	22.9

*1 Includes ASEAN EIP obligations of $1.755 million per year (SO1=20%; SO2=80%)
*2 Does not include $2.5 million allocation for Energy Efficiency Initiative for Benjamin Franklin Fellowship Program to be programmed by Global/USAEP/USAIDs in India, Indonesia & the Philippines

STRATNEW.5/22/95

UNITED STATES – ASIA ENVIRONMENTAL PARTNERSHIP (US–AEP) PROJECT

STRATEGIC OBJECTIVE/PROJECT	PLANNED COST	START DATE	PACD DATE	AS OF SEPTEMBER 30, 1994 OBLIGATION	EXPENDITURE	PIPELINE	MORTGAGE	FY 94 ACTUAL	FY95 OYB	FY 96 CP	FY97 PLAN	Percentage
SO#1 – INTRODUCTION OF SUSTAINABLE DEVELOPMENT CONCEPTS												
ENVIRONMENTAL EXCHANGE PROGRAM	$12,218,000	MAY95	MAY98	$0	$0	$0	$12,218,000	$0	$5,000,000	$4,043,000	$3,175,000	25%
NGO/BUSINESS EXCHANGE	$2,200,000	SEP95	SEP98	$0	$0	$0	$0	$0	$1,500,000	$700,000	$0	75%
ASEAN ENVIRONMENTAL IMPROVEMENT PROJ	$17,500,000	MAR92	JUN98	$8,448,000	$6,265,121	$2,182,879	$9,052,000	$2,328,000	$1,955,000	$1,755,000	$1,755,000	20%
CALIFORNIA EPA	$500,000			$0	$0	$0	$0	$0	$500,000	$0	$0	20%
CONV INTL TRADE IN ENDANG SPECIES (FWS)	$275,450	JAN95	JAN96	$0	$0	$0	$0	$0	$175,450	$100,000	$0	100%
CONSERVATION EXCHANGE PROGRAM	$1,000,000			$0	$0	$0	$0	$0	$260,000	$0	$740,000	100%
SMITHSONIAN EEP BUY–IN	$500,000			$0	$0	$0	$0	$0	$500,000	$0	$0	100%
WATER ENVIRONMENT FEDERATION	$496,000	APR95	APR97	$0	$0	$0	$496,000	$0	$496,000	$0	$0	10%
AIR AND WASTE MANAGEMENT ASSOCIATION	$408,000	APR95	APR97	$0	$0	$0	$408,000	$0	$408,000	$0	$0	10%
SO#2 – INCREASING INDUSTRIAL EFFICIENCY AND DECREASING INDUSTRIAL POLLUTION												
ENVIRONMENTAL EXCHANGE PROGRAM	$12,218,000	MAY95	MAY98	$0	$0	$0	$12,218,000	$0	$5,000,000	$4,043,000	$3,175,000	65%
NGO/BUSINESS EXCHANGE	$2,200,000	SEP95	SEP98	$0	$0	$0	$0	$0	$1,500,000	$700,000	$0	25%
WATER ENVIRONMENT FEDERATION	$496,000	APR95	APR97	$0	$0	$0	$496,000	$0	$496,000	$0	$0	75%
AIR AND WASTE MANAGEMENT ASSOCIATION	$408,000	APR95	APR97	$0	$0	$0	$408,000	$0	$408,000	$0	$0	75%
TECHNOLOGY REPRESENTATION II (DOC)	$2,100,000	JUNE95	JUNE98	$0	$0	$0	$0	$0	$2,100,000	$0	$0	60%
TECHFUND SRI LANKA	$225,000			$0	$0	$0	$225,000	$0	$75,000	$75,000	$75,000	80%
TECHNOLOGY FUND II (NASDA)	$7,782,575	SEP93	SEP96	$5,282,575	$1,770,600	$3,511,975	$2,500,000	$3,282,575	$0	$1,500,000	$1,000,000	90%
ENV TECHNOL NETWORK FOR ASIA (ETNA/CTIS)	$1,400,000	SEP94	SEP95	$800,000	$0	$800,000	$800,000	$800,000	$0	$300,000	$300,000	90%
ENVIRONMENTAL TECH TRANSFER ENHANCEMENT	$400,000			$0	$0	$0	$0	$0	$0	$200,000	$200,000	90%
ENVIRONMENTAL ACTION II (EPA)	$1,400,000			$0	$0	$0	$0	$0	$0	$900,000	$500,000	90%
CLEAN ENERGY (DOE/ADEPT)	$125,000	AUG93	AUG94	$125,000	$119,302	$5,698	$0	$0	$0	$0	$0	90%
STATE INITIATIVE (CSG)	$4,500,000	SEP94	SEP97	$3,500,000	$0	$3,500,000	$1,000,000	$3,500,000		$1,000,000	$0	75%
CALIFORNIA EPA	$500,000			$0	$0	$0	$0	$0	$500,000	$0	$0	60%
INDUSTRIAL TECHNOL & ENVIRONMENTAL MGT (ITEM)	$800,000			$0	$0	$0	$0	$0	$0	$400,000	$400,000	100%
FOREST PRODUCTS LABORATORY	$100,000			$0	$0	$0	$0	$0	$100,000	$0	$0	100%
ENTERPRISE FINANCE (OPIC)	$2,000,000	SEP93	SEP96	$1,000,000	$32,134	$967,866	$1,000,000	$47,000	$0	$1,000,000	$0	60%
INFRASTRUCTURE FINANCE ADV SERV (K&M)	$1,496,702	AUG95	AUG95	$1,496,702	$473,145	$1,023,557	$0	$0	$0	$0	$0	75%
PETC/GLOBAL ENERGY	$625,000	SEP94	SEP95	$475,000	$475,000	$0	$150,000	$475,000	$150,000	$0	$0	100%
ENERGY PHASE I	$500,000			$0	$0	$0	$0	$0	$0	$0	$500,000	100%
ENERGY PHASE II	$600,000			$0	$0	$0	$0	$0	$0	$100,000	$500,000	100%
GLOBAL ENERGY (ENERG TECH INNOV PROJ)	$150,000			$0	$0	$0	$0	$0	$150,000	$0	$0	100%
ASEAN ENVIRONMENTAL IMPROVEMENT PROJ	$17,500,000	MAR92	JUN98	$8,448,000	$6,265,121	$2,182,879	$9,052,000	$2,328,000	$1,955,000	$1,755,000	$1,755,000	80%

UNITED STATES – ASIA ENVIRONMENTAL PARTNERSHIP (US-AEP) PROJECT

STRATEGIC OBJECTIVE/PROJECT	PLANNED COST	START DATE	PACD DATE	AS OF SEPTEMBER 30, 1994 OBLIGATION	EXPENDITURE	PIPELINE	MORTGAGE	FY 94 ACTUAL	FY95 OYB	FY 96 CP	FY97 PLAN	Percentage
SO#3 – AVAILABILITY OF POTABLE WATER/WASTE DISPOSAL SYSTEMS IN URBAN AND PERI-URBAN AREAS												
STRAT INIT: WATER/WASTEWATER (HG)	$1,935,000	JUL93		$1,450,000	$1,450,000	$0	$485,000	$950,000	$135,000	$350,000	$0	100%
STRAT INIT: WATER/WASTEWATER (ACEC)	$384,700	MAY95	MAY97	$0	$0	$0	$0	$0	$180,700	$0	$204,000	100%
WATER/WASTEWATER: NEW INITIATIVES	$1,100,000			$0	$0	$0	$0	$0	$0	$500,000	$600,000	100%
ENVIRONMENTAL EXCHANGE PROGRAM	$12,218,000	MAY95	MAY98	$0	$0	$0	$12,218,000	$0	$5,000,000	$4,043,000	$3,175,000	10%
WATER ENVIRONMENT FEDERATION	$496,000	APR95	APR97	$0	$0	$0	$496,000	$0	$496,000	$0	$0	15%
AIR AND WASTE MANAGEMENT ASSOCIATION	$408,000	APR95	APR97	$0	$0	$0	$408,000	$0	$408,000	$0	$0	15%
INFRASTRUCTURE FINANCE ADV SERV (K&M)	$1,496,702	AUG93	AUG95	$1,496,702	$473,145	$1,023,557	$0	$0	$0	$0	$0	25%
TECHNOLOGY REPRESENTATION II (DOC)	$2,100,000	JUNE95	JUNE98	$0	$0	$0	$0	$0	$2,100,000	$0	$0	20%
TECHFUND SRI LANKA	$225,000			$0	$0	$0	$225,000	$0	$75,000	$75,000	$75,000	20%
TECHNOLOGY FUND II (NASDA)	$7,782,575	SEP93	SEP96	$5,282,575	$1,770,600	$3,511,975	$2,500,000	$3,282,575	$0	$1,500,000	$1,000,000	10%
ENV TECHNOL NETWORK FOR ASIA (ETNA/CTIS)	$1,400,000	SEP94	SEP95	$800,000	$0	$800,000	$600,000	$800,000	$0	$300,000	$300,000	20%
ENVIRONMENTAL TECH TRANSFER ENHANCEMENT	$400,000			$0	$0	$0	$0	$0	$0	$200,000	$200,000	10%
ENVIRONMENTAL ACTION TEAMS II (EPA)	$1,400,000			$0	$0	$0	$0	$0	$0	$900,000	$500,000	10%
STATE INITIATIVE (CSG)	$4,500,000	SEP94	SEP97	$3,500,000	$0	$3,500,000	$1,000,000	$3,500,000		$1,000,000	$0	25%
CALIFORNIA EPA	$500,000			$0	$0	$0	$0	$0	$500,000	$0	$0	20%
ENTERPRISE FINANCE (OPIC)	$2,000,000	SEP93	SEP96	$1,000,000	$32,134	$967,866	$1,000,000	$47,000	$0	$1,000,000	$0	40%
TARGETS OF OPPORTUNITY												
MISSION TRANSFER – BANGLADESH	$300,000	SEP93	DEC99	$100,000	$100,000	$0	$200,000	$0	$0	$50,000	$50,000	100%
MISSION TRANSFER – MONGOLIA	$300,000	SEP93	DEC99	$100,000	$100,000	$0	$200,000	$0	$0	$50,000	$50,000	100%
MISSION TRANSFER – INDIA	$1,250,000	SEP93	DEC99	$500,000	$500,000	$0	$750,000	$250,000	$250,000	$200,000	$200,000	100%
MISSION TRANSFER – INDONESIA	$1,230,000	SEP93	DEC99	$480,000	$480,000	$0	$750,000	$250,000	$250,000	$200,000	$200,000	100%
MISSION TRANSFER – NEPAL	$390,000	SEP93	DEC99	$95,000	$95,000	$0	$295,000	$0	$95,000	$50,000	$50,000	100%
MISSION TRANSFER – PHILIPPINES	$1,000,000	SEP93	DEC99	$500,000	$500,000	$0	$500,000	$250,000	$0	$200,000	$200,000	100%
MISSION TRANSFER – SRI LANKA	$590,000	SEP93	DEC99	$240,000	$240,000	$0	$350,000	$140,000	$150,000	$100,000	$100,000	100%
MISSION TRANSFER – SUVA	$100,000	SEP93	SEP93	$100,000	$100,000	$0	$0	$0	$0	$0	$0	100%
MISSION TRANSFER – THAILAND	$650,000	SEP93	DEC99	$500,000	$500,000	$0	$150,000	$250,000	$50,000	$0	$0	100%
NEW TARGETS	$1,209,000			$0	$0	$0	$0	$0	$84,000	$475,000	$650,000	100%
BIODIVERSITY CONSERVATION NETWORK	$20,000,000	SEP92	MAR99	$7,900,000	$2,712,914	$5,187,086	$12,100,000	$0	$4,000,000	$1,500,000	$6,500,000	100%
BENJAMIN FRANKLIN FELLOWSHIPS	$2,500,000			$0	$0	$0	$0	$0	$2,500,000	$0	$0	100%

United States – Asia Environmental Partnership
Pipeline Analysis

FY	LOP Funds	Cumulative Obligations	Cumulative Expenditures	Pipeline
1992	$100,000,000	$11,906,500	$975,800	$10,930,700
1993	$100,000,000	$36,976,300	$9,746,400	$27,229,900
1994	$100,000,000	$53,370,100	$27,431,600	$25,938,500
Projections				
1995	$100,000,000	$72,858,100	$48,747,500	$24,110,600
1996	$100,000,000	$92,345,100	$73,284,900	$19,060,200
1997	$120,000,000	$111,837,100	$91,084,900	$20,752,200

ASEAN Environmental Improvement Project
Pipeline Analysis

FY	LOP Funds	Cumulative Obligations	Cumulative Expenditures	Pipeline
1992	$17,500,000	$6,120,000	$21,100	$6,098,900
1993	$17,500,000	$6,120,000	$2,403,600	$3,716,400
1994	$17,500,000	$8,448,000	$6,265,100	$2,182,900
Projections				
1995	$17,500,000	$10,403,000	$8,265,100	$2,137,900
1996	$17,500,000	$12,158,000	$10,265,100	$1,892,900
1997	$17,500,000	$13,913,000	$12,265,100	$1,647,900

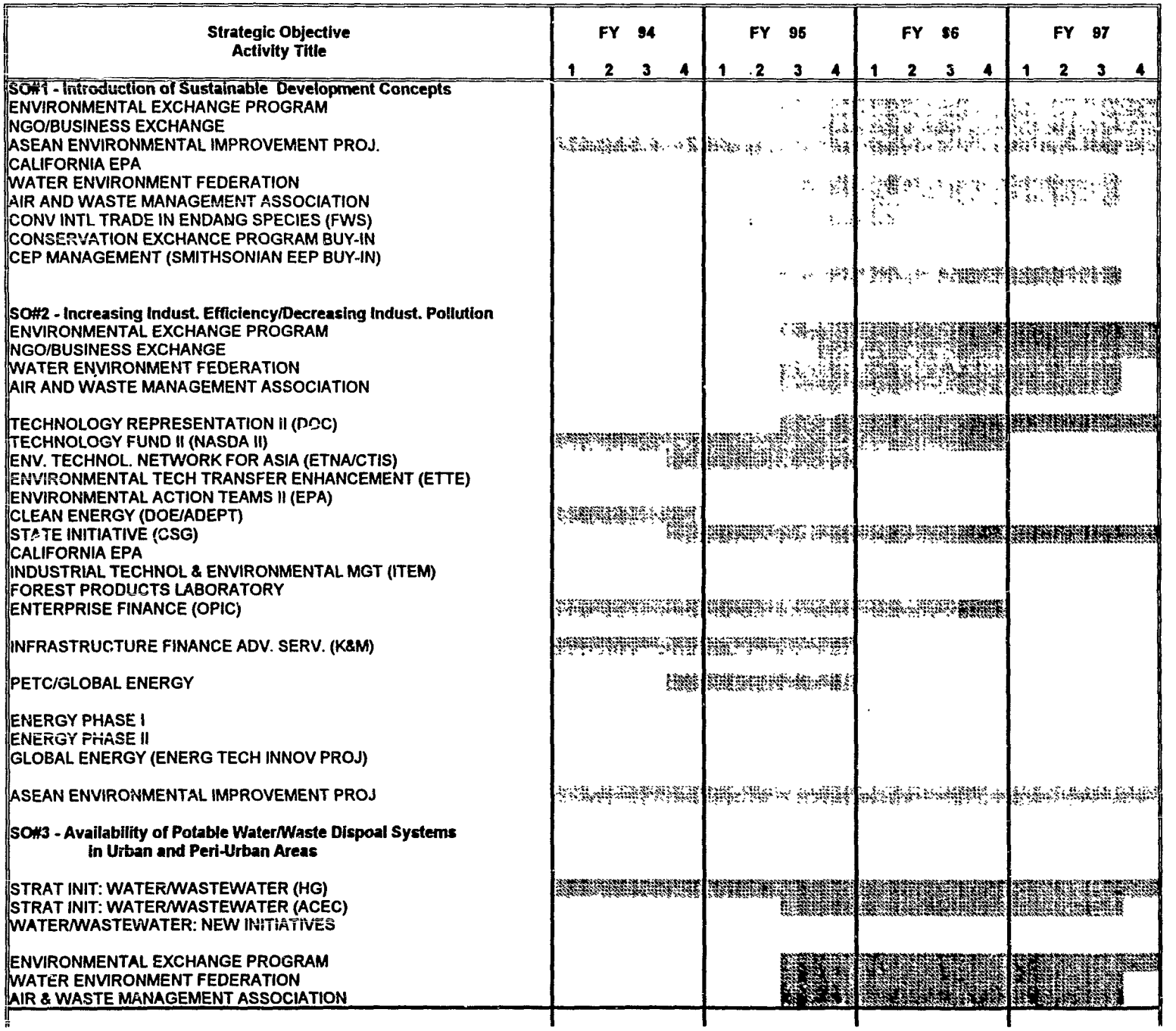
UNITED STATES – ASIA ENVIRONMENTAL PARTNERSHIP (US–AEP) PROJECT
PIPELINE REVIEW

ACTIVITY	FY92 OBLIGAT	FY92 EXPENDIT	FY93 OBLIGAT	FY93 EXPENDIT	FY94 OBLIGAT	FY94 EXPENDIT	EST ANNUAL EXPEND	PIPELINE 9/30/94	EST FORWARD FUNDING	FY95 OYB OBLIG	EST FY1995 EXP	PROJECTED PIPELINE 9/30/95	EST FY1996 EXP	EST.FWD FUNDING (IN YRS)
ENVIRONMENTAL FELLOWSHIPS (TAF)	1400 0	0 0	1953.0	569 7	200.0	1272.2	1711 0	1711.1	0.8	0.0	1711.1	0.0	0.0	0 0
ENVIRONMENTAL EXCHANGE PROGRAM	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0 0	0.0	5000.0	1000.0	4000.0	3875.0	1.2
WATER ENVIRONMENT FEDERATION	0 0	0.0	0 0	0.0	496.0	0.0	250.0	496 0	2 0	0.0	125.0	371.0	246.0	1 5
AIR AND WASTE MANAGEMENT ASSOCIATION	0 0	0.0	0.0	0.0	408.0	0.0	200 0	408.0	2.0	0.0	100.0	308.0	200.0	1 5
NGO/BUSINESS EXCHANGE	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	1500.0	20.0	1480.0	1100.0	1 2
CONV INTL TRADE IN ENDANG SPECIES (FWS)	0 0	0 0	0.0	0.0	0 0	0.0	0 0	0.0	0.0	175.2	45.2	130.0	130.0	1.0
CONSERVATION EXCHANGE PROGRAM	0.0	0.0	0.0	0.0	0 0	0.0	0 0	0 0	0.0	260.0	100.0	160.0	160.0	0 6
SMITHSONIAN EEP BUY–IN	0.0	0.0	0 0	0.0	0.0	0.0	500 0	0 0	0 0	500.0	10.0	490.0	490 0	0 9
TECHNOLOGY REPRESENTATION I (DOC)	0.0	0.0	3139.2	260 0	0.0	1292.6	1550 0	1586.6	0.8	0.0	1586.6	0.0	0.0	0 0
TECHNOLOGY REPRESENTATION II (DOC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	2100.0	500.0	1600.0	1000.0	1.5
TECHNOLOGY FUND I (MTAP/NASDA)	625.0	0.0	250.0	871.0	0.0	0.0	870 0	4.0	0.0	0.0	0.0	4.0	0.0	0.0
TECHNOLOGY FUND II (NASDA)	0.0	0.0	2000.0	0.0	3282.6	1770.6	1700 0	3512.0	2.0	0.0	1700.0	1812.0	1812.0	1.0
ENV TECHNOL NETWORK FOR ASIA (ETNA/CTIS)	0.0	0.0	0.0	0.0	800.0	0.0	800 0	800.0	1 0	0.0	400.0	400.0	400.0	0.0
PD&S MTAP	261.5	162.1	0.0	57.1	0.0	0.0	280 0	42.3	0.0	0.0	0.0	42.3	0.0	0 0
ETTE	0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	200.0	1.0
LINK PROJECT (DOC)	0.0	0.0	0.0	0.0	50.0	0.0	50 0	50.0	1.0	0.0	50.0	0.0	0.0	0.0
ENV BUSINESS EXCH (EBE/WEC)	1400.0	0.0	1871.0	765.6	746.0	1707.1	1548.0	1544.3	0.8	0.0	1544.3	0.0	0.0	0.0
SHORT–TERM TRAINING I (USETI)	300.0	0.0	247.6	547.6	0.0	0.0	547.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SHORT–TERM TRAINING II (USETI)	0.0	0.0	600.0	0.0	1109.2	1221.6	1220.0	687.6	0.6	0.0	687.6	0.0	0.0	0.0
ENVIRONMENTAL ACTION TEAMS I (EPA)	970.0	0.0	700.0	156.5	600.0	624.0	650.0	1489.5	2.3	0.0	650.0	839.5	650.0	1.3
ENVIRONMENTAL ACTION TEAMS II (EPA)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	900.0	1.5
CLEAN ENERGY (DOE/ADEPT)	0.0	0.0	125.0	0.0	0.0	119.0	120.0	6.0	0.0	0.0	0.0	6.0	0.0	0.0
STATE INITIATIVE (CSG)	0.0	0.0	0.0	0.0	3500.0	0.0	1500.0	3500.0	2.3	0.0	200.0	3300.0	1500.0	2.2
CALIFORNIA EPA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	500.0	100.0	400.0	400.0	0.8
INFRASTRUCTURE FINANCE ADV SERV (K&M)	0.0	0.0	1500.0	0.0	0.0	473.1	500.0	1026.9	2.1	0.0	500.0	526.9	500.0	2.1
ENHANCEMENT GRANTS (TDA)	500.0	0.0	0.0	0.0	0.0	127.0	0.0	373.0	0.8	0.0	300.0	73.0	73.0	0.2
ENTERPRISE FINANCE (OPIC)	0.0	0.0	953.0	0.0	47.0	32.1	500.0	967.9	1.9	0.0	200.0	767.9	500.0	1.5
TRADE FINANCE (BAFT)	0.0	0.0	60.0	0.0	60.0	59.8	60.0	60.2	1.0	0.0	60.2	0.0	0.0	0.0
ENERGY PHASE I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
ENERGY PHASE II	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
INDIA/PETC	0.0	0.0	0.0	0.0	225.0	225.0	225.0	0.0	0.0	150.0	150.0	0.0	0.0	0.0
GLOBAL BUREAU (ENERGY EFFICIENCY)	0.0	0.0	0.0	0.0	250.0	250.0	250.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GLOBAL ENERGY (ENERG TECH INNOV PROJ)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	150.0	150.0	0.0	0.0	0.0
INDUSTRIAL TECHNOL & ENVIRONMENTAL MGT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	400.0	1.0
FOREST PRODUCTS LABORATORY	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	50.0	50.0	50.0	0.5

UNITED STATES – ASIA ENVIRONMENTAL PARTNERSHIP (US–AEP) PROJECT
PIPELINE REVIEW

ACTIVITY	FY92 OBLIGAT	FY92 EXPENDIT	FY93 OBLIGAT	FY93 EXPENDIT	FY94 OBLIGAT	FY94 EXPENDIT	EST ANNUAL EXPEND	PIPELINE 9/30/94	EST FORWARD FUNDING	FY95 OYB OBLIG	EST FY1995 EXP	PROJECTED PIPELINE 9/30/95	EST FY1996 EXP	EST.FWD FUNDING (IN YRS)
RESEARCH TRIANGLE INSTITUTE	0.0	0.0	96.0	93.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0
STRAT INIT: WATER/WASTEWATER (HG)	0.0	0.0	500.0	500.0	950.0	950.0	900.0	0.0	0.0	0.0	0.0	0.0	350.0	1.0
STRAT INIT: WATER/WASTEWATER (ACEC)	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	180.7	45.0	135.7	90.0	1.5
MISSION TRANSFER – BANGLADESH	0.0	0.0	100.0	100.0	0.0	0.0	100.0	0.0	1.0	0.0	0.0	0.0	50.0	1.0
MISSION TRANSFER – INDIA	0.0	0.0	250.0	250.0	250.0	250.0	250.0	0.0	1.0	250.0	250.0	0.0	200.0	1.0
MISSION TRANSFER – INDONESIA	0.0	0.0	230.0	230.0	250.0	250.0	250.0	0.0	1.0	250.0	250.0	0.0	200.0	1.0
MISSION TRANSFER – MONGOLIA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0
MISSION TRANSFER – NEPAL	0.0	0.0	95.0	95.0	0.0	0.0	95.0	0.0	1.0	95.0	95.0	0.0	50.0	1.0
MISSION TRANSFER – PHILIPPINES	0.0	0.0	250.0	250.0	250.0	250.0	250.0	0.0	1.0	0.0	0.0	0.0	200.0	1.0
MISSION TRANSFER – SRI LANKA	0.0	0.0	100.0	100.0	140.0	140.0	140.0	0.0	1.0	150.0	150.0	0.0	100.0	1.0
MISSION TRANSFER – SUVA	0.0	0.0	100.0	100.0	0.0	0.0	100.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
MISSION TRANSFER – THAILAND	0.0	0.0	250.0	250.0	250.0	250.0	250.0	0.0	1.0	50.0	50.0	0.0	0.0	0.0
PROJECT SUPPORT														
TECHNICAL SUPPORT SERVICES I	2200.0	800.0	4389.0	2620.9	1953.0	2603.1	2600.0	2518.0	0.8	280.0	2800.0	2798.0	0.0	0.0
TECHNICAL SUPPORT SERVICES II	0.0	0.0	0.0	0.0	0.0	0.0	2600.0	0.0	0.0	3500.0	870.0	2630.0	2600.0	1.0
STRATEGY DEVELOPMENT (TERI)	650.0	0.0	0.0	159.6	250.0	574.1	500.0	166.3	0.3	0.0	166.3	0.0	100.0	0.2
GLOBAL EPAT (WINROCK)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	76.6	76.6	0.0	0.0	0.0
DEPT AGRICULTURE RSSA FOR APEC	0.0	0.0	0.0	0.0	100.0	46.1	170.0	53.9	0.3	170.5	170.0	54.4	54.4	0.3
INVITATIONAL TRAVEL	16.0	13.7	14.0	11.3	21.0	19.9	16.0	8.1	0.5	50.0	50.0	8.1	0.0	0.0
AMER ASSOC ADVANCE SCIENCE ADVISORS	0.0	0.0	80.0	0.0	0.0	80.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QUALITY ASSURANCE (MSI)	0.0	0.0	300.0	0.0	206.0	268.9	130.0	237.1	1.8	0.0	130.0	107.1	107.0	0.8
PROJECT AUDIT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
PROJECT DEVELOPMENT AND SUPPORT	282.0	0.0	117.0	0.0	0.0	399.0	300.0	0.0	0.0	0.0	0.0	0.0	300.0	0.7
BIODIVERSITY CONSERVATION NETWORK	3300.0	0.0	4600.0	283.3	0.0	2430.0	4000.0	5186.7	1.0	4000.0	4273.0	4913.7	5300.0	0.8
GRAND TOTAL	11906.5	975.8	25069.8	8270.6	16393.8	17685.2	27964.0	26436.5		19488.0	21315.9	27410.6	24537.4	
ASEAN ENVIRONMENTAL IMPROVEMENT PROJ	6120.0	21.1	0.0	2382.5	2328.0	3861.5	1755.0	2182.9	1.2	1955.0	1755.0	2382.9	1755.0	1.3
BENJAMIN FRANKLIN FELLOWSHIPS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2500.0		2500.0		

ANE/U.S.-ASIA ENVIRONMENTAL PARTNERSHIP



ANE/U.S.-ASIA ENVIRONMENTAL PARTNERSHIP

Strategic Objective Activity Title	FY 94				FY 95				FY 96				FY 97			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
INFRASTRUCTURE FINANCE ADV SERV (K&M)																
TECHNOLOGY REPRESENTATION II (DOC)																
TECHNOLOGY FUND II (NASDA)																
ENV TECHNOL NETWORK FOR ASIA (ETNA/CTIS)																
ENVIRONMENTAL TECH TRANSFER ENHANCEMENT																
ENVIRONMENTAL ACTION TEAMS II (EPA)																
STATE INITIATIVE (CSG)																
CALIFORNIA EPA																
ENTERPRISE FINANCE (OPIC)																
Targets of Opportunity																
MISSION TRANSFER - BANGLADESH																
MISSION TRANSFER - INDIA																
MISSION TRANSFER - INDONESIA																
MISSION TRANSFER - NEPAL																
MISSION TRANSFER - PHILIPPINES																
MISSION TRANSFER - SRI LANKA																
MISSION TRANSFER - SUVA																
MISSION TRANSFER - THAILAND																
APEC ENVIRONMENTAL PROGRAM																
NEW TARGETS																
BIODIVERSITY CONSERVATION NETWORK																
BENJAMIN FRANKLIN FELLOWSHIPS																
Project Support																
TECHNICAL SUPPORT SERVICES I (TR&D)																
TECHNICAL SUPPORT SERVICES II (TBD)																
STRATEGY DEVELOPMENT (TERI)																
DEPT AGRICULTURE RSSA FOR APEC																
GLOBAL EPAT																
INVITATIONAL TRAVEL																
QUALITY ASSURANCE (MSI)																
PROJECT AUDIT																
PROJECT DEVELOPMENT & SUPPORT (PD&S)																

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EXPLANATORY NOTES FOR PROPOSED INDICATORS

1. SO1: Sustainable Development as a National Goal

Strategic Level Indicator

Countries around the globe have set two potentially conflicting goals for themselves: improving environmental quality (in part by reducing *current* levels of pollution and resource degradation), and achieving large, sustained increases in economic activity. Indeed, by the middle of the next century, the Asia region is projected to be more than seven times larger than it is today. Quite possibly, political leaders in Asia will face no greater challenge in the decades ahead than reconciling these two goals. Doing so will demand continuing effort at the highest levels of government, including international cooperation on a scale seldom seen.

The types of changes required are relatively straight forward: environmental regulation needs to be overhauled to promote long-term innovation and pollution control and prevention, and waste minimization; more effective economic incentives doe investments in clean technologies and environmental management are long overdue; current measures of industrial productivity need to be reconceptualized so they recognize environmental costs; and altogether more attention needs to be paid to how clean technologies can be transferred successfully from country to country.

Tracking these changes will be complicated; but the Secretariat believes monitoring to identify those countries taking explicit account of sustainability among the more familiar development goals related to income growth, income equality, and reductions in poverty would stand as an appropriate proxy and which could be easily measured.

Program Outcome Indicators

PO1.1: *widespread commitment to and adoption of sustainable development approaches, plans, and policies.*

PO1.1 is a more complicated challenge. The Secretariat believes it can get a handle on this outcome, however, through the country assessments. International agreements and treaties are already tracked by the Department of State. A test list of analytical tools and methodologies is being developed in cooperation with World resources Institute and Winrock International (a list which could be verified by brief discussions with development and environmental missions in participating countries). More difficult is the measurement of the number of countries adopting specific policies in support of sustainable development goals. This indicator may, necessarily, have to be qualitative, relying on the

judgment of think-tanks in country, the Asian Development Bank, and World Bank.

> **PO1.2:** *widespread commitment to and adoption of environmental management policies.*

Again, these indicators will necessarily have to be qualitative, although the secretariat will seek to define a standard with its evaluation contractor Winrock International (which is also the contractor for the Global Bureau's EPAT project). Our initial judgment is that most of the advancing and industrializing countries in the region already have environmental regulatory regimes on the books (relatively easily verified) yet only few have enforcement at international standard (more difficult, and only qualitatively verifiable). On the other hand, through engagement with regional organizations like APEC and ASEAN, the Secretariat believes it will be able to both advocate and measure alternatives to "command and control".

> **PO1.3:** *increased participation of individuals, NGOs, and businesses in environmental activities.*

Measurement of this PO will require more work. The Secretariat is exploring the possibility of working with an environmental NGO in each participating country to develop a measurement template for this kind of activity. As suggested earlier, this kind of institutional partnership has multiple uses to the program (i.e., measurement, institutional partnership and participation, and public disclosure/advocacy). In this sense, then, measurement costs are partially offset up legitimate program investment. The proposed indicators are illustrative only and will be worked out with participating organizations.

> **PO1.4:** *increased awareness of sustainability and environmental issues.*

See PO1.3 above.

2. SO.2: Increasingly Efficient and Less Polluting Industrial Regimes

Strategic Level Indicators

The Secretariat has wrestled with the appropriate indicator for this SO for some time. As noted above, there is a growing sense that economic indicators conventionally underestimate the value of the environment. National income accounts, such as GNP, treat activities that erode the soil, contaminate air and water, and diminish forests and fisheries as contributions to income rather than as consumption of capital. Similarly, and importantly herein, measures of industrial productivity and corporate accounts fail to

consider the costs of *not* protecting the environment. Without economic indicators that fully reflect the value of the environment, environmentally perverse public policies and private practices are likely to continue.

On this basis, and after considerable discussion with staff of the Global Environmental Management Initiative (GEMI), Tellus Institute, and World resources Institute, the Secretariat has identified a set of performance measures which are equally useful as "markers" for public disclosure. For this reason, the Secretariat is reluctant to back away to intermediate measures which fail to grapple with the important substantive point. It is intended to work closely with the nongovernmental organizations identified above, the Asian Development Bank, World Bank, and environmental think-tanks in participating countries.

Program Outcome Indicators

PO2.1: *strengthened and expanded incentives for environmental quality.*

The indicators proposed for PO2.1 reflect those principal incentives at work in the international marketplace. They do not yet include incentives which may be country specific (to be developed as part of the country assessments). As defined, they are easily tracked with the exception of the proposal to measure the number of Asian governments credibly enforcing environmental rules and regulations (as discussed under strategic level indicators above).

PO2.2: *increased use of environmental considerations in business decision-making.*

The indicators proposed for PO2.2 are quantitative and easily identified. The Secretariat believes they are also good proxies for evidence of environmental decision making by business. The more difficult issue will be, who collects the information? As discussed above, the Secretariat hopes to engage an environmental think tank or other nongovernmental organization in each country to collect this information, not simply as a performance measure but also as a substantive part of US-AEP's policy/environmental management/incentives objectives for public disclosure.

PO2.3: *significant reduction in market imperfections to facilitate an increase in environmental technology transfer from the United States to Asia.*

The effort under PO2.3 is the most challenging of all the POs, but it is the area where the Secretariat has a significant head start based on work already under way with its technical support and quality assurance contractors. As reflected at Part II, Section B, the indicators are broken-out by information (from the U.S. to

Asia and from Asia to the U.S.; linkages and long-term partnerships; intermediation; financial systems; and technology transfer (all activities within the current technology cooperation component). In fact, the Secretariat's existing tracking system is directed to these issues, and it is the judgment of the technical support and quality assurance contractors that only modest modifications and upgrades will be required to meet the requirements for performance measurement.

> **PO2.4:** *a significant reduction in market imperfections to facilitate an increase in environmental infrastructure investment for industrial waste from the United states in Asia.*

See PO2.3 above.

3. SO.3: Increased Environmental Systems and Services Available to Poor Households in Urban Areas in Asia

Strategic Level Indicators

The Secretariat believes this information will be readily available in each participating country.

Program Outcome Indicators

> **PO3.1:** *strengthened and expanded incentives for private and community investment in environmental systems and services in urban areas.*

While this information is not regularly collected in each country, the Secretariat would proposed to include this among the items to be collected with think tanks or nongovernmental organizations in each participating country.

> **PO3.2:** *reduced market imperfections to increase technology transfer between the U.S. and Asia to increase U.S. investment in potable water systems and services in Asia.*

This information is largely collected, or easily included, through systems developed by the Secretariat's technical support and quality assurance contractors under the current technology cooperation component.

> **PO3.3:** *reduced market imperfections to increase technology transfer between the U.S. and Asia to increase U.S.investment in sewerage and solid waste disposal systems and services in Asia.*

See PO3:2 above.

UNITED STATES - ASIA ENVIRONMENTAL PARTNERSHIP : ASIA AND NEAR EAST A/PRE REGIONAL ACTION PLAN

PD-ABL-205
1 OF 2 (24X)
1995

UNITED STATES - ASIA ENVIRONMENTAL PARTNERSHIP : ASIA AND NEAR EAST A/PRE REGIONAL ACTION PLAN

PD-ABL-205
2 OF 2 (24X)
1995